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(THE)

FINAL PHILOSOPHY,

OR

SYSTEM OF PERFECTIBLE KNOWLEDGE
ISSUING FROM THE HARMONY OF
SCIENCE AND RELIGION.

BY

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THIS WORK
IS LASTINGLY ASSOCIATED
IN THE MIND OF THE AUTHOR
WITH THE SUSTAINING COURAGE AND FAITH
OF HIS WIFE,

ELIZABETH KANE,

IN WHOM SHONE
WITH WOMANLY GRACE AND NOBLEST CULTURE
ALL THAT MADE THE NAME OF
HER HEROIC BROTHER
ILLUSTRIOUS.

6519

"AS these great things are not at our disposal, we here, at the entrance of our work, with the utmost fervency and humility, put forth our prayers to God, that remembering the miseries of mankind and the pilgrimage of this life, where we pass but few days and sorrowful, He would vouchsafe through our hands, and the hands of others, to whom He has given the like mind, to relieve the human race by a new act of His bounty. We likewise beseech Him, that what is human may not clash with what is divine; and that when the ways of the senses are opened, and a greater natural light set up in the mind, nothing of incredulity and blindness towards divine mysteries may arise; but rather that the understanding, now cleared up, and purged of all vanity and superstition, may remain entirely subject to the divine oracles, and yield to faith the things that are faith's: and lastly, that expelling the poisonous knowledge infused by the serpent, which puffs up and swells the human mind, we may neither be wise above measure nor go beyond the bounds of sobriety, but pursue the truth in charity."

Bacon: INSTAURATIO MAGNA.

PREFACE.

In the present age there has been a seeming conflict between science and religion; but their essential harmony may still be sought upon philosophical principles, and as itself affording the one last philosophy or theory and art of perfect knowledge.

With this object in view, the author, in the year 1861, issued a brief essay entitled *Philosophia Ultima*, together with a corresponding scheme of academic studies; and in pursuance of that scheme, in the year 1865, a chair of instruction was secured in the College of New Jersey, through the generous and intelligent sympathy of some friends in Philadelphia, of whom should here be named the late Rev. Doctor William M. Engles, Mr. George W. Childs, Mr. Anthony J. Drexel, and the Hon. Furman Sheppard.

The present volume may be regarded as the first-fruits of an educational experiment thus begun, and for a time successfully pursued. But it also contains philosophical opinions and doctrines which are of more general interest, and it may,

therefore, be judged upon its own merits by the wider public to which it is now offered.

In the closing chapter will be found so much of the original essay as still remains to be expanded; while the completion of the final philosophy itself, it need scarcely be said, can only be the work of many minds through coming generations.

October, 1877.

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INTRODUCTION.

THE

ACADEMIC STUDY OF CHRISTIAN SCIENCE.

INTRODUCTION.

In the treatment of a vast theme, it will be necessary to sacrifice details for the sake of principles. If we would rise to general views, we must forego many a special inquiry which might please the fancy of the moment, and be content oftentimes with truths which can have no other charm than their own simple sublimity; as the traveller, in order to gain a panoramic view of the whole country, will leave behind him its pleasant lowlands and picturesque villages, and climb to some lonely and rugged summit, from whence can be descried nought but the grand outlines of earth and sea and sky in the naked majesty of nature.

And, as a preliminary duty, we shall need to sketch the region before us. Indeed, it would seem but right and becoming that the first public utterances from this new chair should explain and commend it. Hitherto, it can scarcely be said to have acquired a fitting name or province in the academic domain. Both teacher and student are somewhat like voyagers to new lands, who must make their map as they sail. Let it, therefore, be the object of the first lecture to define the limits of our study, to glance at its main features and to seize a foretaste of its advantages and pleasures.

What is proposed in this whole department is simply to blend more harmoniously together those two general bodies of learning, the scientific and the religious, which were once so compactly joined in Christian philosophy and scholastic culture, but have since been slowly falling apart, in jarring fragments, as one science after another has conflicted with

one doctrine after another, until at length the breach between them is too alarming to be any longer disregarded. The time has come, it is thought, to attempt their correlation and reconciliation more formally and thoroughly, by assigning to a single professor the whole of that intermediate ground formed by their intersection and common to them both: and hence the title which the college authorities have given to the chair is the "Harmony of Science and Revealed Religion."

Now, from this very title it will be seen, that the region before us, strictly speaking, is no unknown realm in the world of learning, but is rather a strip of border land—unfortunately also a scene of border warfare—between two adjacent provinces of ancient name and renown. We shall best be able to define its limits by first carefully excluding on either side what does not fairly belong to it, and then viewing what remains as its proper field and material.

On the one hand, then, let it be premised, that this is not a department of purely scientific instruction. It will not be the province of the chair to teach any of the sciences considered as bodies of positive knowledge, or to espouse any of the theories by which men of science are divided into parties, or, still less, to broach any new theories upon scientific questions. Such researches, in fact, would not be possible, and might not be desirable. They would not be possible, because no single mind could master all the sciences so as to be at home in each of them; and they might not be desirable, since those very faculties and habits of mind which are needed in special investigations, would hinder rather than help that more abstract and philosophical work which we have before us. Moreover, full provision for them has already been made in the academic system; and instead of intruding upon other established departments of learning, it should rather be our duty and privilege simply to accept the scientific facts and theories therein presented, and then proceed to study them in their relations to religious truth and knowledge. In a word, we must leave out of view so much of Science as cannot be brought into connection with Revealed Religion.

On the other hand, however, let it be premised also, that this is not a department of merely religious instruction. It will

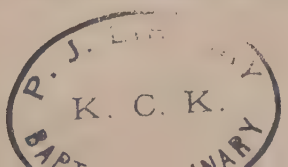
not be the province of the chair to teach religion professionally as a system of divinity, or to defend polemically any of the creeds by which the religious world has been sundered into various denominations, or, much less, to add any new creed to the existing medley. However wisely such questions might divide us elsewhere, yet here, as a body of students engaged in an academic pursuit, we meet together on the high ground of our common Christianity, and are concerned for its defence against common foes, in the interest of truth as well as of virtue. To mingle the jargon of sects with that of the schools would but make worse confusion, tending to the reproach of sacred learning not less than to the disadvantage of the secular. And we need not fear that true religion, whether doctrinal or practical, is in any danger of being slighted, at its own time and place, in our schemes of education. Instead of forcing such studies into the more scholastic part of a curriculum, we may safely assume the leading religious truths and doctrines to be known and familiar, and limit ourselves to the simple task of showing their points of contact and correspondence with scientific facts and theories. In a word, we must leave out of view so much of Revealed Religion as cannot be brought into connection with Science.

When we have thus excluded what is purely scientific teaching on the one side and merely religious teaching on the other, there remains to be formed a midway course, which will include only what they have in common; being partly scientific and partly religious and therefore, properly speaking, a philosophical department of instruction. Within such limits, it would seem to be the province of the chair to teach both religion and science so far as they are logically connected; to inculcate their mutual relations as joint interests of truth; to define their boundaries and laws as neighboring domains of research; and to exhibit their contents and results as one harmonious body of knowledge. They are thus brought together in the very title of the professorship; and to treat them otherwise, to pursue them as conflicting branches of learning or array them as antagonists on the field of inquiry, would be both unphilosophical and perilous. It would be

unphilosophical, because it would mar and sunder vast portions of truth which logically require each other and which, as lovers of truth, we should seek to combine together in their integrity and consistency; and it would be perilous, since it could only tend in its moral effects either toward superstition or toward bigotry, according as we became mere partisans of one interest against the other. It has, in fact, ever been the boast of our colleges that in them religion and science have been practically taught in harmony, and it is simply in order to promote such harmony that a new teacher has been charged with it as his special vocation. In so far as he fulfills that vocation, he will only be helping forward a work which dates from the origin of Christian learning, but which, owing to the growth of knowledge and the rise of new opinions, has become too vast for any one already immersed in more special researches and too important to be left to the risks of a casual treatment. The increasing multiplicity of intellectual pursuits seems to call for this new division of labor in the community of scholars, and there need be no fear that other fields will suffer curtailment or invasion. Leaving the existing scientific and religious courses undisturbed, the proposed course will simply aim to connect and complete them; to take the materials of truth which they respectively furnish in a fragmentary or unrelated state and organize them into a rational system; to show that all ascertained facts of nature and revealed truths of Scripture are not only congruous, but complemental; that even such scientific hypotheses and religious dogmas as seem to be in conflict are passing under fixed logical laws, through a process of mutual correction and conciliation, into a similar region of coherent verities; that it is thus the mission of science to confirm and illustrate religious truths and of religion to give rational support and consistency to scientific facts; and that, sooner or later in the history of mankind, there must result a perfect coincidence of human with divine knowledge, together with a practical blending of all the great interests issuing therefrom. In a word, that Religion and Science cannot do without each other; that God hath joined them together and man dare not put them asunder—this must be taken as the key-note to their Harmony.

Glancing next at the materials or topics inclosed in the province thus defined, we shall be at once embarrassed by their richness and variety. The most meagre synopsis of them (and as yet none other can be given), may serve to show the ample scope of our inquiries. There will be two general courses of study, corresponding to the two sides of the department, and these two courses, as made consecutive or parallel, will be joined in a third, designed for their completion and unity.

On the religious side, we shall at first be occupied with the study of Natural Theology as already in harmony with the Physical Sciences, from astronomy to anthropology:—the existence of a rational First Cause of the universe as evinced by traces of design and contrivance in each natural object and throughout all nature; the personality of that First Cause as at once conceivable, cognizable, and scientifically probable; and the attributes of that Divine Person, his creative power, wisdom, and goodness as displayed throughout the whole inanimate and animate creation. To this will succeed the study of Natural Religion as connected with the Mental Sciences, from psychology to metaphysics:—the probability of a future life as suggested by both material and spiritual analogies; of a divine government as based upon moral and social facts interpreted according to any ethical theory; of a present state of trial and discipline as required for the future fulfillment of our mental and moral capacities and for the completion of the divine government; together with the perfect reconcilableness of the whole theology and theodicy with any true metaphysical and ethical theory of the world. Having thus traced the scientific evidences of natural religion by the aid of Paley and Butler, we shall then proceed to the problems of Revealed Religion with a view to its connection and harmony with Science:—the probability of a supernatural revelation as sustained by the analogies of natural knowledge; the paradoxes of revelation as equalled by those of science; the historical development of revealed religion; the history of its evidences, from the primitive miracles and prophecies, through the successive conflicts of Christianity with Judaism, with Paganism, with Philosophy, with Barbarism, with Mohammedanism,


K. C. K.

with Rationalism and Heathenism; the classification of its evidences; their logical and ethical value as estimated by rival evidential schools; their prospective increase and the new modern evidence already accruing from the more perfect sciences and likely to accrue through the whole scale of the sciences, with ever-cumulative probability toward moral certainty itself. The tendency of this part of the course will be to show the importance of science to religion.

On the scientific side, meanwhile, we shall be pursuing the study of Inductive Science, both physical and psychical, with a view to its connection with Revealed Religion:—the definition of science in distinction from common knowledge and from mere speculation; the different classifications of the sciences, with the only philosophical classification as based upon the order of facts in space and time; the logical methods of the different sciences, both physical and mental, and their normal scale from astronomy to anthropology, and from psychology to theology. To this may be added the study of their history, the true progress made in each of them by their chief votaries through the discovery of facts and verification of theories, together with still contending hypotheses, authorities and arguments; their relative stages of advancement and the prospects of their gradual completion. After thus following the great masters of inductive logic, from Bacon to Whewell, we shall then advance to the more abstruse problems of Metaphysical Science in its harmony with Revealed Religion:—the proved existence of a Creator or Absolute Mind as the only rational postulate and support of science; the validity of reason and revelation as respective functions of the divine intellect and human intellect and correlate factors of knowledge in all the sciences; the logical rules or canons applicable to their normal relations in the sciences, to their existing relations, to their prospective relations; and the ideal perfectibility of knowledge through a gradual concurrence of reason with revelation and final coincidence of science with religion. The tendency of this part of the course will be to show the importance of religion to science.

At length on the basis of these elementary, though abstract

reasonings, will follow their most practical and popular application in the ensuing course of lectures, treating of the historical origin, development and prospects of Christian science; of the early conflicts and alliances between science and religion from the dawn of Greek philosophy to the Reformation; of modern antagonism between science and religion as maintained by infidels and apologists in the different sciences, in philosophy and in civilization; of modern indifferentism; modern eclecticism; modern scepticism, each treated in the same manner; and of the essential harmony of science and religion as involving the promotion of the one, the vindication of the other, and the consequent establishment of the Final Philosophy or theory and art of perfect knowledge.

Such is the task before us. The bare statement of it would be enough to intimidate and appal us, were the perfect fulfillment of it to be exacted from any single mind. Indeed, nothing but its transcendent importance and urgency could warrant our undertaking it; and it therefore behooves us, first of all, to assure ourselves that it is both practicable and desirable.

But here, at the threshold, we are met by an objection which should be challenged and repelled from the outset, though it can only be thoroughly treated at a subsequent stage of our investigation. It may be said, as indeed it has sometimes been said, that religion and science have nothing to do with each other; that the one is matter of mere faith, the other of pure knowledge; the one a product of divine revelation, the other of human reason; the one concerned only with eternal affairs, the other with temporal; in a word, that the two interests are absolutely distinct and incongruous, so that any attempt to join or blend them would be but the fond conceit of a devout or a speculative fancy. There have been sober men of science, like Faraday, who could see no advantage in tieing up the study of the physical sciences with natural religion, and judicious divines, like Chalmers, who would deprecate a mere academic theism or speculative theology as tending to intellectual pride and unbelief, and the authority of Bacon himself has been cited against such a union as "a mixture which makes both an heretical religion and a fantastical philosophy."

Now, that there may be modes of viewing and exhibiting science and religion in conjunction, which are open to this objection, need not be questioned. Were true science combined with a false religion, or the true religion combined with false science, the only result would be their mutual degradation and degeneracy, as when the sons of God became mated with the daughters of men and were cursed with a progeny of giants in sin. But the real question is, whether true science and true religion are wholly insusceptible of being correlated; whether, though distinct and diverse, they are not still reciprocal and complemental; whether, in a word, when brought together and logically adjusted, they will not prove to be but opposite halves of the same rounded whole of truth, supporting segments in the same rising arch of knowledge, harmonious interests, wedded

"Like perfect music unto noble words."

At the first glance, by their most common definition, their relationship will assert itself. Science is exact knowledge and religion is revealed doctrine; but revealed doctrine and exact knowledge of what? Of facts; and largely, of the very same facts. For, of every class of facts, there is both a religious aspect and a scientific aspect, a phase of them which has been revealed by God and a phase of them which has been discovered by man. The mere scientist may seek to view them in an exclusively scientific light, as phenomena of nature, or the mere religionist may try to view them in an exclusively religious light, as manifestations of God; but after all, they are but the same objects contemplated on different sides; the same realities, bearing phases both of which are equally essential to their reality. We might almost as well attempt to ignore the facts themselves in which science and religion are but rooted branches of truth, as to ignore their relations to each other.

Let us take an illustration from astronomy. In the starry heavens the scientific observer discovers illimitable matter and force disposed throughout space and time under fixed mechanical laws; in other words, a department of physics; while the religious observer beholds the immensity, eternity,

omnipotence, and wisdom of the one true God; in a word, a department of theology. Now, these different aspects of the same phenomena, these almost opposite views of the same facts, are not only equally true, but equally essential to make up the whole truth in regard to those facts. The one has been most surely discovered by man, and the other as certainly revealed by God, and neither can be surrendered but at the sacrifice or peril of both. Celestial physics without the postulate of a Great First Cause or Creator, would be little better than the elephant in the cosmogony of the Brahmin, which upheld the world and yet itself stood upon nothing; and the Jehovah of the Bible without the astronomical illustration of His attributes would now seem but like an Israelitish Jupiter enthroned in the clouds of Palestine. The absurdity of the one in a scientific light would only be equalled by the superstition of the other in a religious light. But let these two half truths or halves of truth be brought together; let the laws which bind sun, planet, and satellite in their spheres be viewed as expressions of the divine will and the whole theatre of immensity be lighted up with the divine intelligence, and then both the sage and the saint can together exclaim, "The heavens declare the glory of God."

Our first argument then is, that religion and science are related logically. By their very definition it becomes inconceivable, if not impossible, that they should form two distinct kinds of truth, flying apart in everlasting contradiction. The scientific view of the universe, and the religious view of the universe, stand or fall together. Take either from the other, and you would have but half the truth, and that half without logical support. Imagine, if you can, science perfected without religion, all phenomena referred to their laws and all laws to their causes, and you would still need the rational postulate of a great First Cause of those causes, and a great Final Cause of those laws, such as you can only find in the Jehovah of Scripture, the Alpha and the Omega, the beginning and the end, which was and which is and which is to come, God over all blessed forever. Or, on the other hand, try to imagine religion completed without science, the one true God revealed in all the plenitude of His perfections, and you would

still need as a rational counterpart of this revelation, such an illustration of His perfections as the different sciences alone can afford; celestial physics to unfold His immensity, eternity and omnipotence; terrestrial physics, to display His wisdom and goodness; and the psychical sciences, to approve His holiness, justice and truth. If your science without religion would land you in the absurdity of a creation without a Creator, your religion without science would leave you with the abstraction of a Creator without a creation. But imagine now that Creator inhabiting yet controlling His creation; think of all natural laws as resolved into divine methods, and of divine attributes as expressed in all natural phenomena; and you will see how perfectly logical, how absolutely reasonable is the correlation and coalescence of science and religion.

But, in the second place, they are related historically as well as logically. Their connection is not merely nominal and ideal, but real and actual. It is simple matter of fact, that they have grown up together through all the past. The history of the one cannot be written without that of the other. They appear in every age as twin-factors of human progress. In all nations, as in all individuals, they have proceeded side by side, and their successive conflicts and alliances have formed the crises and turning-points in the development of civilization. Their very representatives have been the central figures in every great scene of history. In Egypt, out of which Moses comes with the wisdom of the Pharaohs as the true conqueror of the Sphinx, behold religion nursed in the cradle of science: in Judea, whither eastern sages are led by a star to the incarnate Christ, behold science bowed at the shrine of religion: in Greece, where Paul from the Areopagus declares to the Epicureans and Stoics their unknown god, behold religion solving the problems of science: in Pagan Rome, when Plato speaks through the apologies of Justin, behold science defending religion: in Christian Rome, when Aquinas reasons with the logic of Aristotle, behold religion reclaiming science: in Italy, when Galileo braves the anathemas of the Church, behold science dissipating the superstitions of religion: in Germany, when Luther gives

back the Bible to the world, behold religion rekindling the torch of science: in America, whence a young Christian civilization is already scattering light and life, behold science giving wings to religion: and through coming ages, as knowledge runs to and fro and holiness fills the earth, behold both religion and science together shedding their millennial splendor. What, indeed, from the highest point of view, is the history of the world but the history of science and religion?

And, in the third place, they are also related practically. Their logical and historical connection bears its fruit before our eyes. In common life they appear as united interests, so vitally bound up together that neither could live without the other, and both would perish were they torn asunder. If you view them in your own experience, you will find that it is simply impracticable that your faith should contradict your knowledge, that you could hold as true in religion what you believed to be false in science, or as true in science what you knew to be false in religion. And if you view them in the world at large, you will find them so intertwined that they must flourish or decay together. Strike a blow at either and you wound both. Think of what society would be, were religion cultivated to the absolute neglect of science,—a reign of superstition, tyranny, and barbarism, like that which covered Europe during the dark ages of the Church. Think of what society would be, were science cultivated to the utter neglect of religion,—a reign of infidelity, impiety and sensuality, brilliant but abortive, like that which in French history has been written in letters of blood and terror. Then think of what the world would be, were these two great interests pursued together, correcting and perfecting each other, until civilization shall have triumphed over barbarism, and Christianity over heathenism throughout the earth,—and you will see that history joins with reason, and experience with theory in asserting the living reality of their relations.

And their relations are very extensive. They do not merely touch at occasional points, but form one continuous junction. There is no truth in Scripture which does not impinge upon some fact in nature, as there is no fact in nature which does not bear upon some truth in Scripture. Scientific

theories and religious doctrines act and re-act upon each other throughout the domain of research. We have but to glance along the boundary line of the two departments in order to see their correspondences. Each science is connected with some biblical doctrine; astronomy, with the doctrine of creation and the angels; geology, with the doctrine of genesis and the sabbath; anthropology, with the doctrine of the first and second Adam; psychology, with the doctrine of regeneration and immortality; sociology, with the doctrine of the Church and the millennium; theology, with all the peculiar doctrines of Christianity. In a word, the cyclopædia of science runs parallel with that of religion.

Moreover, their relations are very complicated. Instead of forming a bare contact, they overlap and combine, like intersecting spheres or intertwining branches. Though the facts of nature and truths of Scripture are ever accordant, yet the scientific hypotheses explaining those facts and the religious dogmas expressing those truths have become entangled together in endless knots of controversy. Every such dogma is involved in some such hypothesis. The dogma of immediate creation is involved in the rival hypotheses of evolution and succession; the dogma of the six days' genesis, in the rival hypotheses of uniformity and catastrophe; the dogma of the Adamic covenant, in the rival hypotheses of unity and plurality of races; the dogma of the resurrection, in the rival speculations of the spiritualist and materialist; the dogma of divine right, in the rival schemes of the socialist and legitimist; and all the peculiar dogmas of orthodoxy, in the rival systems of the naturalist and supernaturalist. In fact, everything dogmatic in religion is tied up with something hypothetic in science.

It need scarcely be added, that their relations are also very vital. Not in any merely harmless or abstract manner do they thus take hold of each other's very heart and life. Despite our general belief that all religious truths and scientific facts will be found accordant, yet at present there is no doctrine which is not staked in some theory and no theory which is not staked in some doctrine. If we hold the one we must let go the other, while if we give up either we may lose

both. What becomes of our theory of the heavens, if we hold that the worlds were commanded full-born from nothing? and yet, if we hold that they have been slowly evolved from nebulæ, where is our doctrine of creation? What becomes of our theory of the earth, if we hold that it was made in six days of twenty-four hours? and yet, if we hold that it has been developed through unmeasured time, where is our doctrine of the sabbath? What becomes of our theory of races, if we hold that they descended from Adam and Eve? and yet, if we hold that they sprang from indigenous centres, where is our doctrine of the divine image and fall of man? What becomes of our theory of the soul, if we hold that it is independent of the body? and yet if we hold that it is interwoven with the body, where is our doctrine of immortality and the resurrection? What becomes of our theory of society, if we hold that the millennium will be sudden and miraculous? and yet, if we hold that it will be historical and rational, where is our doctrine of the second coming and judgment of Christ? What becomes of our whole theory of religion, if we hold to a special and supernatural revelation? and yet if we hold to one that is natural and universal, where are all the distinctive doctrines of Christianity? Whatsoever we may hold in religion is thus so adventured with whatsoever we may hold in science as to put in peril the very life of truth and virtue.

If, then, these relations are so extensive, so complicated, so vital, they do surely require adjustment and admit of harmony. It will appear at a glance, that they are not what they should be, or what they might be, or what they will be.

They are not what they should be. Their existing state is not their normal state. Were religion and science perfected, they would together form one harmonious body of truth. Unless we adopt the monstrous conceit, that the one is exclusively true and the other utterly false, the one wholly of God and the other merely of the devil; or the equally wild fancy, that both are fictitious, the one mere superstition and the other all delusion,—we must grant their present conflict to be abnormal. No one who holds to the truth in each of them can believe their ideal state to be one of sheer contradiction. Whatever paradoxes may now obscure them, he knows that

in themselves they are congruous, and has but to survey the chaos of creeds and theories resulting from their existing antagonism, in order to assure himself that as yet their relations are not what they should be.

As little are they what they might be. Their existing state is not their necessary state. No fatality has doomed them to an abnormal strife. No insuperable obstacle forbids their adjustment. Not only have we a moral pre-assurance of it, but we have also capacities and means for facilitating it. We have simply to bring the two interests logically together as fast as they mature, and under the natural laws of thought, by the spontaneous affinities of truth, they will shake off all accretive errors and run together like drops of quicksilver from the dust. If our theories clash with our creeds, this is not because of any actual disagreement between natural facts and revealed truths, not even because of any essential defects in our instruments of knowledge, but simply because of some wrong induction from nature or some false interpretation of Scripture, because of some illegitimate use either of reason or of revelation. The very collisions which arise between science and religion in spite of their ideal harmony, are evidence that as yet their relations are not what they might be.

And still less are they what they will be. Their existing state is not their final state. The harmony possible between them is becoming actual. History shows that their present derangement is transient and partial. Already, whatsoever has been certainly discovered in nature is sufficiently congruous with whatsoever has been plainly revealed in Scripture. It is only the theoretical and the doctrinal, the hypothetical and the dogmatic portions of knowledge which remain in conflict, and even these have been steadily diminishing. While the least-developed sciences are in different stages of opposition to revealed religion, the more advanced and perfect are coming into harmony with it and yielding it new defence and illustration; and while the least-important doctrines are in seeming conflict with science, the more essential and fundamental may already be taken as its only rational postulates. And this mutual demonstration, this logical interaction, must go on from one class of facts and truths to another, until the reason

of man shall stand forth coincident with the word of God. As sure as the future will be born out of the past, as sure as truth must in the end be found consistent with truth, so sure it is that science and religion are destined to harmony.

But here it may be asked, whether we are not proving too much for our purpose. If the two interests are so surely destined to harmony, why meddle with them? Why attempt to adjust them? Let them alone, and they will adjust themselves. Providence, without artificial aid, will in the due time and way bring about the reconciliation. In one sense, this may be true. The great social and historic process of harmonizing science and religion may indeed be viewed as a Providential achievement, a work of that Divine Intellect whose revealed promises and rational premises combine to ensure its fulfillment, even in spite of all human error. And if any one is fain to adjourn the whole question to such a distant millenium, we would not disturb his confidence. He is welcome, if he can, to live in that grand future. But let him still have charity for those who must live in the present, and whose faith in the future does not blind them either to the labors of the past or to the duties of the present. Remember, it is not always the mere espousal of truth which will secure its triumph; nor need the certainty of that triumph relax all effort. Does the warrior sheathe his sword in mid-battle, because the foe is yielding? And shall that great moral victory which we discern as yet only afar off have any other effect than to kindle our zeal and courage? Besides, we have our places in the ranks and our parts in the battle. The victory will not come without our agency. Providence is pleased to effect it by means of human intellects, through successive generations, rather than to send it upon the world as a mere happy accident or blessed miracle. And instead of projecting it as a distant ideal beyond our present concern, it behooves us to struggle towards it as if it were within our reach, to be impatient of existing evils which hinder its realization, to feel our responsibility for its attainment and ever exalt it in our esteem over all inferior aims and attractions.

We are now ready to estimate the importance of the great reconciliation. And first, is it not important to Religion that

she should be in harmony with science? It is true, she does not depend upon science for the regeneration of the individual. Among her most sincere followers are those who know little even of theological science, and still less of science in general, while some of her most learned scholars, after preaching to others, might become castaways. It is true, too, that she may not be essentially dependent upon science even for the regeneration of society. We can conceive, that divine revelation might have been made at the first demonstrative, instantaneous, universal, like the noon-day sun, instead of having been like the twilight dawn, restricted to small portions of mankind, prolonged through thousands of years, and composed of only credible material; and we may even dream of new miracles and further revelations as means of vanquishing infidelity and promoting Christianity. But hitherto it has not pleased Divine Providence so to govern the world; and taking the facts as we now find them, what we affirm is, that for the vindication and extension of religion, science should be welcomed as a useful auxiliary, if not an indispensable ally. It would seem to be her mission to testify, though often as an unconscious witness, to the authority of the Scriptures; to aid in correcting and perfecting our fallible interpretation of their meaning; to afford the propagating appliances of art and literature and commerce; in a word, to clothe Christianity in that panoply of civilization, by means of which superstition and heathenism are to be subdued throughout the earth. She is as light to the cross and wings to the Church, from age to age. And it were simply idle to ignore an agent capable of becoming either so valuable a friend or so formidable a foe. Let the mere religionist who is fain to shut himself up in pharisaic scorn of her claims, beware lest the oracles of God be wrested from his hands, and become as a gospel to the Gentiles.

Is it not important to Science also, that she should be in harmony with religion? Too much has she hitherto slighted or forgotten her indebtedness to religion. Some of her most zealous votaries have worshipped Nature more than God, while not a few have defied the very altar at which her torch was lighted. It need not be denied that she has some-

times suffered from theological hate and fanatical interference; and it must be owned also, that there is an advantage in freeing her from the trammels of sanctimonious phraseology. Let her have all needed liberty of research, and frame her dialect as distinct as possible from that of worship. But when we have duly made such allowances, it will still remain true that, for the cultivation and completion of science, the sentiments and ideas, the truths and doctrines of religion are not only valuable, but essential. Humility, reverence, docility, faith are no less requisite in the pursuit of knowledge than the other more intellectual qualifications; for the kingdom of nature, like that of heaven, can only be entered as a little child. And in the last analysis, that Great First and Final Cause revealed in the Scriptures, affords the only rational theory of the world upon which even our physical researches can proceed, or be wrought into intelligible unity. Religion alone, by exhibiting the universe as the creation of a Creator, can transform it from chaos to cosmos; and without her sublime revelation it would be not less anomalous to reason than appalling to faith. She is herself the very lamp of reason and the only clue to the riddle of the world. Let the mere scientist who is fain to cast off her teachings in the pride of research, be assured that he will but find nature to be her temple, and himself, like the Athenian of old, an ignorant worshipper at her shrine.

And lastly, is it not important to Philosophy, as the friend of both science and religion, that she should recognise and pursue their harmony? Her aim may indeed seem more speculative than that of science, and less practical than that of religion, as everywhere she searches for truth as truth for its own sake. And her course in pursuit of that aim may at times have been wayward, as here she has ignored all religion for the sake of science, or there she has merged all science in religion. Not yet has she reached her own lofty ideal by embracing them both in one view. Not yet has she wrought that complete system of knowledge which shall combine all modes of inquiry in all fields of research. But if religion and science are genuine provinces of truth, if reason and revelation

are correlate factors of knowledge, it is only by conjoining both factors throughout both provinces, that the complete system of knowledge can ever be attained; it is only in and through the harmony of science and religion that we may aspire after the one Ultimate Philosophy.

Descending now from these general views, for a glance at the educational value of Christian science, we shall find that it ranks with the highest studies which can mould the forming mind. It takes its place among them as a course of applied logic; of logic, in its richest inductive processes, and of such logic as applied to the pre-eminent problems of science, religion and philosophy. Apart from its momentous significance in a moral light, it cannot but have an intellectual advantage, distinguishing it from the theological study, known as Christian Apologetics, which enters more particularly into the training of the clergy than into the liberal culture of those who are not yet committed as propagandists of a creed. We do not undervalue such attempts to render science tributary to orthodoxy, but we believe it possible also to make essential Christianity helpful to science, and that this, as well as the other, should be included in the education of an accomplished scholar. Moreover, in a Philosophical Faculty as distinguished from a Theological Faculty, while it is ever of absolute importance to forestall the objections of sceptics, yet the more characteristic aim will be to develop the intellectual capacities, to discipline the reasoning powers, to induce philosophical habits of thought, and to subserve the interests of truth and learning. It is, in fact, for such secondary purposes largely that the great works of Paley and Butler, with their acknowledged defects, have been used so long in the English and American universities. Though primarily designed to repel the arguments of the atheist and infidel, yet for generations they have also served as a kind of mental gymnastic for the training of the Christian scholar in the philosophy of religion. In this character they may almost be said to have a valuation with the higher logic or mathematics; and if we may judge by the number of editions, introductions, compends, analyses, which have accumulated for the help of teachers and students, they are not likely to be very soon

supplanted. Long before we are ready to store them away among the mere trophies in the arsenal of the Christian Evidences, they may yet do much good service in drilling vigorous thinkers, and acute reasoners, as well as able defenders of the faith.

But besides this mere intellectual discipline, this incidental advantage to the student, there will be the still higher moral benefit of having such symmetrical development of all his powers as will leave neither his knowledge nor his faith in excess or at variance, and of being furnished with such sound, yet catholic principles, as will fit him for the high duties appertaining to the whole educated class in our day. The questions with which we are to deal are the living questions of the age. Instead of being restricted, as in former times, to the cloisters of divinity, the academies of science, and the shades of philosophy, they have become the topics of the newspaper, the rail-car and the fire-side. And they are rising in importance every hour. You are going forth to meet them in a practical form. As lawyers, physicians, clergymen, scholars in every walk of life, you will soon be mingling in the controversies of your generation. You will soon be exposed to the intellectual temptations peculiar to your respective callings, and to all the evils of one-sided culture and special aims. You will be taking sides in the great battle between the knowledge and faith of the time; and it rests with you now to determine, in these preliminary trials, whether you shall hereafter be found among the mere bigots and charlatans of your day, or ranked as lovers of truth and benefactors of mankind.

As to the pleasures of our academic task, the argument may not be so plain. Unfortunately, we have to deal with many subjects which do not excite a spontaneous interest in all minds. Scientific studies are too dry to some and religious studies too grave to others, to be esteemed aught than mere task-work; and when both are to be pursued together in the still more arid walks of philosophy, we are led quite away from common life into a region of sublimated thought and feeling toward which but few minds are attracted and which can only be reached by long-sustained efforts of attention and

thought. And yet, as the adventurous traveller in search of rare prospects in nature, while ascending some difficult mountain range, scaling peak after peak, with strained nerve and muscle, will be rewarded at every pause with a healthier glow and a grander horizon, so in the course of these arduous speculations of ours we may enjoy an elevation and expansion of mind, fancy, and heart, well worth all the labor they cost us.

There will be that intellectual pleasure which springs from the discovery of new truths, and the perception of new and beautiful relations between them; subtle harmonies, which easily persuade us

> "How charming is divine philosophy;
> Not harsh and crabbed, as dull fools suppose,
> But musical as is Apollo's lute."

That the word and the works of God will yet be found harmonious; that Nature and Scripture must appear as only pages in the same book and parts of one argument; that divine revelation is one day to be supported by a human demonstration; in a word, that science shall ever expand toward Omniscience, is at once a yearning and a presentiment of the philosophic mind; and as we trace step by step the realization of this glorious ideal, we may know something of that keen mental enjoyment and rational exultation with which the zealous seeker for truth cries Eureka at the goal of his researches.

There will also be that imaginative pleasure which attends an enlargement of the field of thought and a multiplication of the materials for conjecture and speculation. The connections between science and religion are as numerous, extensive and intricate as are the connections between the Creator and His creation; and as we shall proceed to unfold them one after another in their due order, Nature will open before us in all her infinite variety and vicissitude as but a manifold revelation of Him who "hath made everything beautiful in its time." Devout fancy, now soaring up amid the countless orbs of astronomy, then diving down amid the secret atoms of chemistry, anon wandering back through the teeming ages of Genesis, at length hastening on to the ripening glories of the Apocalypse, will find herself in realms of fact more won-

derful than any realm of fiction; the sober verities of religion will outshine the most splendid fables of superstition; and it shall be as if the classic Muses were following in the train of the Christian Graces on a tour of the creation for the good of the creature and the glory of the Creator.

And there will be added to all this the high moral satisfaction with which we witness the triumph of truth over error, right over wrong, and good over evil. That conflict which is raging in the bosom of this age between the reason of man and the word of God, and which is yet to issue practically in the predominance of a Christian civilization over heathen barbarism throughout the earth, is here to be viewed by us in the calm region of abstraction, in the cool mood of philosophy, and in the clear light of prophecy. As from the loop-holes of a retreat, wherein we are being drilled for the actual warfare, we look forth on a battle-field, bounded only by the horizon of thought, covered all over with the smoke of controversy, and whereon not kings and peoples alone, but great ideas and principles are struggling for the mastery, with lasting interests of humanity staked upon the issue; and as we see how the powers of light are steadily gaining on the powers of darkness, and even now marshalling to victory, we may share in that solemn joy which the great master of English philosophy utters forth in the name of the seers and sages of all time: "It is a pleasure to stand on the shore and to see ships tossed upon the sea; a pleasure to stand in the window of a castle and to see a battle and the adventures thereof below; but no pleasure is comparable to the standing on the vantage-ground of truth (a hill not to be commanded, and where the air is always clear and serene,) and to see the errors and wanderings and mists and tempests in the vale below; so always that this prospect be with pity, and not with swelling or pride."

PART FIRST.

THE PHILOSOPHICAL PARTIES

AS TO

THE RELATIONS

BETWEEN

SCIENCE AND RELIGION.

CHAPTER I.

EARLY CONFLICTS AND ALLIANCES BETWEEN SCIENCE AND RELIGION.

At the close of our introduction we stood upon an imaginary eminence of faith and hope, overlooking the vast battle-field of modern philosophy. Resuming the figure, we purpose now to review the motley hosts which are there mustered; to point out the various standards under which they are marshalled; to trace their changing fortunes over the field, as here they are seen closing in the deadly grapple, or there resting idly upon their arms, or now rushing wildly in the charge, or anon trailing their banners in the dust; to show how the lines are forming for a last decisive struggle; and at length to gather against the chances of defeat, the sure presages of victory. In plainer words, the next few chapters will be devoted to a survey of the present state of parties in the philosophical world as to the great question of reconciling Science and Religion, with a glance at the prospects of their ultimate harmony.

And we shall begin this part of the work with a brief historical sketch of the causes of their present disturbed relations, as traceable from the dawn of Greek philosophy to the Reformation. It is only by thus studying the past that we may hope to understand the present and to forecast the future. History shows us especially, that great intellectual movements do not burst upon the world as mere happy accidents or miracles, but grow rationally, almost intelligibly, out of some existing need of the human mind, which is known and felt by

the few long before it is seen by the many; for so does Providence rule mankind in order and reason. And if this be true of those two vast reformations in Religion and Science which we now associate with such names as Luther and Bacon and hail as the wonders of our own era, then we must go back to the times when they first sprang into view and even to the causes which for centuries before had been secretly and steadily working towards them. Only by this means, as we shall see, can we trace the rise of that great schism between human and divine knowledge and consequent anarchy of opinions and interests which has become the characteristic peril of modern civilization.

And it may be another reason for such a review, that therein pre-eminently will history appear as philosophy teaching by example. If we are sometimes amused by turning the mistakes of antiquity into a foil to modern wisdom, yet we can also learn from them that we are ourselves still fallible, and especially as to this very class of questions. Indeed, no more instructive chapter of human errors could be written than that which would treat of the collisions between the religious and scientific classes since the beginning of the Christian era; nor could we have a better moral preparation for the controversies still pending between them than a candid study of those which have already been settled. We shall see Christian fathers rejecting facts which heathen philosophers had long before discovered, and infidel savants scoffing at truths which pagan sages yearned to have revealed; and if we need to remember that such models of orthodoxy as Augustine and Turrettin were now and then betrayed into false science, yet we should not forget that such masters of science as Kepler and Newton never for one moment swerved from true religion.

It need hardly be said, that these mistakes of great and good men of the past will be recalled in no invidious spirit, either towards sound theology and religion, or towards true philosophy and science. From our higher point of view we may now distinguish the virtues of individuals from the faults of their times; the truths which have endured from the errors which have passed away. Moreover, even a defeated party can afford to smile at absurdities which it has outgrown, when it is

seen that history reverses the picture against its antagonist, as soon as it is viewed from the other side.

Without pretending to give a full history of Religion and Science in their connection with the leading interests of civilization, it will be enough for our purpose to cull a few examples of the successive conflicts and alliances of the religious and the scientific spirit, the theologic and the philosophic mind, as they will appear, according to a natural division of time, in the pre-Christian and post-Christian ages of Pagan science, and the Patristic, Scholastic, and Reforming ages of Christian science, down to the present critical epoch of decisive warfare And in sketching these outlines we shall endeavor to combine the views of such historians of religion as Neander, Gieseler, Schaff, Matter, D'Aubigné, Millman; such historians of philosophy as Brucker, Tenneman, Cousin, Ueberweg, Zeller, Erdmann; and such historians of literature and civilization as Tiraboschi, Sismondi, Hallam, Schlegel, Guizot, Balmez and Draper.

The Pre-Christian Age of Pagan Science.

(B. C. 500).

And if we would seek the first signs and beginnings of present conflicts we must go back to the age of Pagan philosophy before the Christian era. It is true that science was then in its infancy as nursed in the schools of Greece, and religion had not yet come forth from its divine pupilage in Judea; but certain innate or traditional elements of them both were already active in the existing civilization, and the inevitable strifes of coming ages were dimly foreshadowed as in miniature, wherever bigotry could array itself against enlightenment, or the subtlety of knowledge was seen corrupting the simplicity of faith.

On the one hand, the spirit of bigotry had begun to convert the votaries of philosophy into proto-martyrs of science. It was this spirit, which held up Socrates to public odium in the comedy of Aristophanes as trying to chase Jupiter out of the heavens, because he had sought to explain the thunder and lightning of tempests by a theory of aerial concussions, and at length, for his alleged contempt of the gods, condemned him

to the cup of hemlock. It was this spirit, which drove Anaxagoras into exile for teaching that the god of day was but a globe of fire, and an eclipse not a presage of the wrath of Apollo, but the shadow of a passing planet. It was this spirit, which accused Aristarchus of sacrilegiously attempting to remove the sacred hearth of the universe by supposing in order to account for the phenomena of the seasons that the earth might be in motion and the heavens at rest. And it was this spirit which, at a later period, led Pliny to reflect upon Hipparchus, the father of Greek astronomy, as having invaded the abode of the gods in making a catalogue of the stars.

On the other hand, however, the spirit of sophistry had begun to pervert the recreants from the old mythology into prototypes of the later infidelity. It was this spirit which bred a race of scoffing sciolists amid the altars and temples of the popular faith, and at length, as expressed in the tragedies of Euripides and by the arts of Alcibiades, undermined whatsoever of moral and religious truth still lingered in the ancient legends and laws. It was this spirit which, as Plutarch tells us, even whilst offering at the altar, viewed the priest as but a slaughtering cook, and having decorously consulted the oracle retired to sneer at the bad poetry of its responses. It was this spirit which, in the age of Roman satire, ripened into such hypocrisy that Seneca could gravely argue that divine worship was due only to good manners, whilst Cicero declared that two augurs could not look each other in the face without laughing. And it was this spirit which, at length, under the philosophical emperors, degraded the priests of Jupiter into ministers of the senate, and collected the gods of the provinces into the pantheon as mere trophies of Cæsar.

By the time the Roman rule had spread over the known world, such prelusive strifes between a false religion and a false science had left nothing but a mass of outworn superstitions and fragmental truths, in the midst of which philosophy sat hopeless and unbelieving, with all her problems as yet unsolved.

The Post-Christian Age of Pagan Science.

(A. D. 1–200.)

When Christianity at length emerged upon the stage of Gentile civilization, religion and science were first brought face to face as leading powers in the history of the world, and for a century or two afterwards each seemed striving to supplant the other.

On the side of Christianity, there was at first an apparent effort to supplant Philosophy. The apostles had scarcely left the Church, when there sprang up, in the unlettered class from which the first Christians had been largely recruited, a weak jealousy of human learning which, it was claimed, had been superseded in them by miraculous gifts of wisdom and knowledge. Clement of Rome was held by this party to have enjoined abstinence from mental culture as one of the apostolic canons; Barnabas and Polycarp were classed with St. Paul as authors of epistles which carry their own evidence of imposture; and Hermas, as if in contempt of scholars, put his angelical rhapsodies in the mouth of a shepherd.

And as Christianity came in closer conflict with paganism, this spirit well nigh pervaded the apologetics of the time. Philosophy of every kind was stigmatized as the source of all error, its great masters branded as heresiarchs, and Christians exhorted to flee from the Grove and the Lyceum into the porch of Solomon. "Away," cried Tertullian, "with a Stoic, and a Platonic, and a Dialectic Christianity." We know that the first apologist, Justin, who strove to lead the school of Plato to the feet of Christ, could not quite satisfy those whom he was defending so long as he refused to doff the philosopher's mantle, though he afterwards added to it the martyr's crown. And Eusebius tells us how the culture of logic and geometry came to be placed among the crimes of heretics, of whom it was complained that they lost sight of heaven whilst employed in measuring the earth, and neglected the sacred writings for the works of such infidels as Euclid, Aristotle, and Galen.

On the side of Philosophy, however, there was at the same time a like effort to supplant Christianity. As we are told

by the apostles themselves, it crept into the very fold of the Church, corrupting the pure gospel with an eloquent sophistry; or from beyond its pale scornfully assailed it with the wisdom of the world. At first, indeed, the great writers of the age, Plutarch, Seneca, and Tacitus, deigned not even to notice the new religion which had appeared among the vulgar crowd of gods which for ages past a Protean superstition had been accumulating, or only alluded to it distantly as a fanatical folly which had broken out in a corner of the empire. And even after its rapid spread among the people could no longer be overlooked, it was for some time met with policy and satire rather than with argument. Pliny the younger, whilst admitting the blameless lives of the Christians, felt obliged to treat them as visionary disturbers of the peace; the witty Lucian passed by an easy sneer from the tricks of the magicians to the miracles of the apostles; and Celsus poured all the contempt of aristocratic culture upon the humbling doctrines and homely virtues of the crucified peasant of Nazareth.

But as the philosophy of the age became more aware of the exclusive claims of Christianity, there was a last grand rally of all the schools against the rude teachers from Galilee. The knowledge of the East and the wisdom of the West, Gnosticism and Platonism, were woven together in the Neo-Platonism of Amnonius Saccas, as the one eclectic creed of reason, and the austere Plotinus put forward as superior to any of the Christian models of virtue and devotion. Porphyry, having wrought the system through the polytheistic legends, adroitly strove to match the Hebrew prophecies with the Heathen oracles; and Hierocles aimed to finish the caricature by exhibiting Apollonius of Tyana, a wonder-working demi-god of the Greeks, as the equal of Jesus of Nazareth, the new miracle-working hero of the Jews. When, however, Justin, as a convert from their own ranks, was seen sitting in the Platonic cloak at the feet of Christ, their disdain was quickly changed to hatred and persecution. What had been already hinted in the writings of the philosophers was commanded from the throne of the emperors, and the Coliseum echoed with the fierce shouts of the populace as, year after year, Christian martyrs were thrown to the lions.

It was not until the union of Church and State under Constantine that these bitter conflicts passed away, and Philosophy and Christianity at length joined hands, on their first battle-ground, in the schools of Alexandria.

The Patristic Age of Christian Science.

(A. D. 200—700.)

In the age of the Greek fathers, there was a false peace between theology and philosophy; and religion and science, in consequence, became more or less corrupted by admixture with each other.

Theology, on its part, became corrupted through its rash alliance with the old philosophy. The doctrines of St. John were sublimated into the abstractions of Plato; the Son of God was identified as the divine Logos of the schools; and the high mysteries of the trinity, the incarnation, and the atonement, were couched under abstruse distinctions of metaphysics. Justin Martyr, in his Apologies, had already wrested from Platonism as much of its ethics and theism as it had in common with Christianity. Clement of Alexandria in his Stromata, proceeded to unfold out of such seeds of natural reason the more perfect truths of revelation, and to weave behind the popular Christianity the elements of faith into a system of knowledge. Origen by his allegorical interpretation forced a hidden sense of Scripture which, as the kernel of the Word, should express the occult system of Clement. And thenceforward followed a line of Greek fathers in the East, such as Eusebius, Athanasius, Basil, the two Gregories, Chrysostom and the two Cyrils, who did scarcely more than consecrate the spirit of the Academy in the cloisters and councils of the Church. The chief exceptions were among the Latin fathers of the West, such as Irenæus, Tertullian, and Cyprian, who from the first had resisted the philosophical tendency, and Lactantius, Jerome, and Augustine, who led the way more or less consciously to the system of Aristotle, as that of Plato was on the wane.

Philosophy itself, meanwhile, became not less corrupted through its forced alliance with the new theology. If it gained somewhat on its metaphysical side by having its own

notional entities traced up to revealed realities as the flower from the germ of reason, yet it lost quite as much on its physical side, through a narrowing logic and exegesis which bound it within the letter of Scripture and turned it away from all empirical research; and consequently even such crude natural science as it had inherited from the early Greeks was soon forgotten or buried under a mass of patristic traditions. In geology the speculations of Thales, Anaximenes, and Heraclitus, tracing the growth of the world from water, air, or fire, were only exchanged for the fanciful allegories and homilies of Origen, Basil, and Ambrose on the Hexæmeron or six days' work of creation. In astronomy the heliocentric views of Aristarchus and Pythagoras had already given place to the Ptolemaic theory of the heavens. as a system of crystalline spheres revolving around the earth; and the theologian thus left free to think of man as the moral pivot of the universe, could easily reconcile the theory with Scripture. According to the Orthodox Catechism attributed to Justin Martyr, the chamber or canopy of the heavens, described in the Psalms, is formed by a huge globe or dome of glass which rests upon the waters flowing around the earth which in its turn, as Job declares, is hung upon nothing. St. Chrysostom, or perhaps Severian, a turgid orator mistaken for the "golden-mouthed preacher," explained that the setting sun did not go underneath and around the earth, according to the pagan notion, but passed obliquely below the horizon, and thus, as Solomon says, hasted back to the place whence he arose.

In geography the corruption of natural knowledge with false Biblical views became even more remarkable, and the doctrine of the earth's rotundity and antipodes which had been held by both Plato and Aristotle, and all but proved by the Alexandrian geometers, was at length discarded as a fable not less monstrous than heretical. St. Jerome, in commenting upon the living wheels in Ezekiel's vision, speaks of a foolish conceit of philosophers that there are two hemispheres whose inhabitants stand with feet opposite, like the cherubim in the temple. Lactantius, the Christian Cicero, departing in this matter from his model, classed the notion of a peopled globe among the vagaries of a false

science, and ridiculed such new wonders of the world as hanging gardens, climbing rivers, and inverted men walking beneath us, like shadows in the water. Even Augustine, though he cautiously granted the spherical figure of the earth, denied the existence of antipodes as contrary to the Scripture doctrine of the first Adam, the descent of races from one pair being physically impossible were such unknown regions beyond the seas inhabited by man. So inwrought with these fancies did the theological mind become, that one Cosmas Indicopleustes, an Alexandrian monk of the sixth century, at length set forth a standard Biblical geography, "Topographia Christiana," in which, after mapping the earth as an oblong plain, bounded by trough-like seas, covered with a crystal roof, and having a mountain range in the back ground, behind which the sun was hid at night, he proceeded to cite patriarchs, prophets, and apostles in its defence, as doctrine concerning which it was not lawful for a Christian to doubt.

At the same time, all the issuing interests of this paganized Christianity could not but share in its hybrid character. Its piety became but a mixture of austerity and license. Anthony, the father of asceticism, led forth from the luxury of the city and the court a crowd of anchorites to the caves and deserts of Egypt; Pachomius, the founder of the cloister life, organized monasteries and nunneries as sanctuaries of virtue amid a social corruption too gross to be described; and Simeon, the Stylite, stood for thirty years upon his lofty column above the surrounding worldliness as a model to after ages of penance and mortification. Its ritual was a mere medley of incongruous usages. The sign of the cross became a common charm, as well as a sacred rite; the Lord's day was observed by imperial edict, on a day devoted to the god of the sun; and Christian worship was celebrated in Greek and Roman basilicæ, whose interior was after the pattern of the Jewish synagogue. And its polity was little more than a compact of churchly pride and civil rule. Grand ecclesiastical councils were convoked as organs of the Holy Ghost by the decrees of emperors, with pomp and sometimes with tumult; Christian and Pagan factions contended for supremacy in the Roman Senate; and only ten years after the eagles

of Constantine had carried the cross throughout the empire; Julian, the Apostate, was impiously rebuilding the altars of Apollo and the temple of Solomon.

The Patristic type of Christian science has been likened to a twilight dream of thought before the long night watches of the middle ages. It passed away with the Byzantine empire, of which it was the setting glory, and there ensued, during a chaotic period of several centuries, as elements of another culture, the descent of the Germanic tribes with the new blood of the North, the rise of Charlemagne with the great schools of the West, and the inroads of the Saracens with the lost learning of the East.

The Scholastic Age of Christian Science.

(A. D. 700–1400.)

In the age of the schoolmen, the truce existing between theology and philosophy gave place to a bondage, and the one grew so strong and the other so weak, that there could be as little of fair strife as of free alliance between them.

Theology, in course of time, grew strong enough to subjugate philosophy. It made the Church the only school; orthodoxy, the one test of all truth; the traditions of the fathers, the sole pabulum of the intellect; and the system of Aristotle, a mere frame-work to the creed of Augustine. But it was not by one stride that it reached the throne.

There was first a long period of transition, from the seventh to the tenth century, when the free Platonic spirit still lingered, as in John Scotus Erigena, the Erin-born Scot, who in the midst of surrounding barbarism boldly dreamed of a universal philosophy, as Charlemagne had dreamed of a universal empire, to be wrought out of the wrecks of former systems.

There followed, during the eleventh and twelfth centuries, the forming period of scholasticism, when its first disciples were gathered by Lanfranc in the great Norman Abbey of Bec. Anselm of Canterbury, the second St. Augustine, announced its leading principle by placing faith before knowledge, and confining reason within the bounds of revelation. Peter Lombard, the Master of Sentences, narrowed still more

the circle of free thought by putting the authority of the Church above that of Scripture, and digesting the conflicting opinions of the fathers as the only problems of right reason; and Alexander of Hales, the Irrefragable Doctor, rendered the thraldom of the intellect complete by systematizing the patristic traditions or sentences with the Aristotelian logic, and condensing them into the first Summary of Theology or body of divinity.

Then came the crowning epoch of scholasticism, in the thirteenth century, when its grandest doctors flourished. Albert the Great, the Universal Doctor, wrought the whole Aristotelian system of philosophy into the theological cyclopædia, with a voluminous erudition which amazed his age. Thomas Aquinas, the Angelical Doctor, distilled the huge learned compound into brilliant syllogisms, with a transcendent genius which dazzled all Europe, and made him the very idol of the schools. Duns Scotus, the Subtle Doctor, proceeded to evaporate the distinctions of Aquinas, before thousands of students, in a jargon which defies modern comprehension; and a host of other great doctors with lofty titles, the Enlightened, the Profound, the Sublime, the Perspicuous, the Solemn, paced the same beaten walk of the Stagyrite round about Zion.

And, at the same time, into the service of this arid orthodoxy seems to have been pressed all else that was good and great in human nature. It claimed among its fruits the highest types of virtue and piety. Bernard of Clairvaux, the Mellifluous Doctor, threw over it the charm of a saintly eloquence blended with a knightly valor in its defence; Hugo and Richard, the mystics of St. Victor, retired with it from the strife of the schools into the reveries of the cloister; and Bonaventura, the Seraphic Doctor, mounted by means of it towards the very heaven of rapt devotion. It summoned all the arts to its embellishment. Raphael, as with the pencil of an archangel, portrayed its ideals of heavenly purity and grace; Michael Angelo embodied in architecture the magnificent monuments of its intellectual energy; and Dante wove into verse the gorgeous legends, which, like sunset clouds, illumined its very decline. And it was attended in its career

by every form of pomp and grandeur. Its harsh dialectics had the tournaments of chivalry for a gay foreground, and issued in the splendid romance of the crusades; its prodigious lore flowered into a ritual which, it was said, the inhabitants of heaven might envy, if envy could enter their minds; and its stern decrees were executed by a monarch who had made the throne of the Cæsars his footstool, and before whom kings with their peoples quailed as the vice-gerent of God.

Philosophy, however, during all these centuries, could only succumb to theology. At the beginning of scholasticism, in the person of her first votary, she had been forced to yield to the strong arm of the hierarchy, when John Scotus Erigena, for attempting to re-unite Platonism and Christianity, had been anathematized by Nicholas I. as a pantheist and driven into exile at Oxford. And thereafter her whole domain had been fenced out of the Church as mere profane learning, or invaded only to be conquered, until every province was reduced to the most abject subservience.

In Logic the dialectic of Aristotle was indeed used, but used only upon the set problems of orthodoxy, and any deflection in mere form as well as matter was enough to draw down the anathemas of the Church. Roscelin of Compiègne, the founder of the sect of nominalists, who held that universal ideas are but words, was arraigned as a tritheist, and only escaped death by recantation. William of Champeaux, the founder of the sect of realists, who held the opposite theory that universal ideas are the only realities, was pursued in debate as a pantheist, until he retired discomfited from the schools of Paris; and Peter Abelard, the proud lover of Eloise and great dialectical champion of Christendom, who had vanquished both of these disputants, having at length, in his "Sic et Non," dared to exhibit the problems of faith as paradoxes of reason, was forced to cast his own works into the fire, and condemned to obscurity and silence. To such an extent did these mere logomachies prevail that for centuries afterwards the schools were rent with their feuds, and Europe was at length convulsed with bloody wars and persecutions.

In Metaphysics the system of Aristotle was allowed, but only in subordination to the traditional divinity, and any specu-

lations deviating from that standard were watched with the most jealous scrutiny. Almaric of Bena, having advanced views bordering, as it was supposed, upon pantheism, was expelled from his chair in the University of Paris. David of Dinanto, a pupil of Almaric, who went farther than his master, was likewise degraded, and his writings and followers delivered over to the civil arm. And when it was discovered, to the consternation of the Church, that these heresies had been imbibed from certain works of Aristotle, which had drifted into Europe from Arabia on the ebbing tide of the Crusades, that great master himself was for a time arraigned and his metaphysics forbidden from the very council of the Lateran. It was not until the system had been purged of its Arabian glosses and brought into complete subjection to the faith by the greater schoolmen who came afterwards, such as Albert and Aquinas, that these suspicions were allayed and the Stagyrite at length admitted to the seat of Augustine as "the Philosopher" pre-eminent in the schools.

In Physics, except so far as they also could be summed up in the Church cyclopædia, there remained nought but the forbidden arts of magic and sorcery; and the soundest divines, if addicted to them, could not escape the dark imputation. Sylvester II., a renowned physicist of the tenth century who had studied Aristotle in the Moorish schools of Cordova, was universally believed to have won St. Peter's chair through a compact with the prince of darkness, and the legend long ran, that his tomb exuded with moisture and the bones rattled within, whenever a Pope was about to die. Simon of Tournay, a popular lecturer of the thirteenth century who excelled in chemistry and natural philosophy, was charged by the monks with having been smitten with palsy for his profane temerity. And even Albert the Great, for his physical studies, rested under like suspicions, so terrifying Thomas Aquinas with a speaking automaton that the angel of the schools broke it in pieces with his staff as a very work of the devil. Peter D'Abano, styled the Conciliator for his attempt to harmonize the physical sciences with philosophy, was condemned as a sorcerer and heretic while he was yet dying, and then burned in effigy, his body having been secreted from the impotent

rage of his persecutors. Even as late as the fifteenth century there appeared a learned apology, by the French writer Naudè, for all the great men suspected of the black art, among whom were named the leading physicists of the middle ages.

With Logic thus debased into sophistry, with Metaphysics swallowed up in mere dogmatic divinity, and with Physics left growing wild beyond the pale of the Church, it was not strange that each of the sciences became overrun with the rankest weeds of superstition and error. Mathematics languished into a kind of mystical arithmetic and geometry, stigmatized as magic, until revived by the infidels of Arabia. Astronomy relapsed beyond the earliest Greek science towards Eastern astrology and was more busy in calculating nativities than eclipses. Chemistry wandered off with Mohammedan alchemy in search of the elixir of health and the philosopher's stone. Geography was still bounded by the narrow horizon of Christendom, and held the antipodes to be mere heathen monsters of which a Christian ought not even to speak. Natural history, except as it survived in the works of the Aristotelian Albert, had been freed from the fauns, and naiads and dryads of antiquity only to become infested with dragons, elves, and goblins little removed from the fetichism of savage tribes. Psychology, if it had acquired a spiritual hierarchy of saints and angels rivalling the classical gods and heroes, yet retained with them a mass of legends, relics, and impostures of which a heathen philosopher would have been ashamed. Sociology, in passing from Pagan to Christian Rome, had but unfolded a theocracy before which the claims of the Pharaohs and the Cæsars would together have paled into impotence. And even theology, under the full blaze of revelation, had admitted a Queen of Heaven to her throne, and to her altars, a sacrifice of which the wildest mythology had not dreamed.

The scholastic type of Christian science contained the seeds of its own dissolution, and at length broke in twain, together with the great Roman hierarchy which upheld it. With its decline came the revival of letters, the rise of the inductive logic, the revolt of reason from authority, the growth of free institutions, and the ascendancy of the industrial spirit, as the main causes of our modern culture.

The Reforming Age of Christian Science.

(A. D. 1400—1900.)

In the age of the reformers, the long bondage of theology and philosophy burst into a rupture, the one assailing and the other recoiling, until both science and religion have been brought to bay in our own times as for a last pitched battle. We must trace these antagonistic movements separately from their remote beginnings in the previous age towards their extreme results in our own day.

Theology was the first to take the offensive, and assail philosophy. She had indeed, as St. Clement declared, only admitted that pagan stranger as a Hagar into the household of faith and, now that the subtle handmaid was becoming a rival, hastened to drive her back into the wilderness. Long before Protestantism had a name, the first risings of the philosophic spirit, in the speculations of John Scotus and Almaric, had been discerned, as if with jealous foreboding, and bitterly resisted. As early as the thirteenth century, the great friar Bacon, whose physical experiments and speculations might all but eclipse his more famous namesake, but who only terrified his own age as the Wizard Doctor, after vainly protesting against the reigning intolerance in his treatise on the Nullity of Diabolical Magic, had been forced to spend the last ten years of his life within the dungeons of Paris; and Raymond Lully, the Enlightened Doctor and Great Inventor of the Arts, who strove to reorganize the whole Christian science of the time and enlist it in a grand logical crusade against heathen error, after encountering the contempt of Christendom, had fallen a martyr to his wild dream among the Moors of Africa. In the fourteenth century, Durand of Clermont, the Most Resolute Doctor, who dared to introduce into the schools a general independence of sects, authorities, and systems, had been treated as an apostate by the brethren of his own order; and William of Occam, the Invincible Doctor, who revived the long-forbidden logic of Roscelin, and braved the whole scholastic class with an ironical scepticism, as well as by revolutionary appeals to princes and people, had fled over Europe everywhere persecuted but not destroyed. And at length, to-

wards the close of the fifteenth century, the disciples of Durand and Occam, by papal and royal edicts, had been expelled from the universities of France and forced into alliance with the followers of Luther and Melancthon in Germany. It was not strange, therefore, in such a state of parties, that a general persecution should have been enkindled, not merely against the divines who were reforming religion, but also against any philosophers who were emancipating science. History shows us at this time, here and there, a martyr of the revived school of Plato. Pico of Mirandola, the Phœnix of the Age, who convoked a grand philosophical council at Rome, and all but sacrificed his coronet to his piety, was everywhere calumniated as a sorcerer and fanatic and driven to a premature grave. Peter Ramus, who rose from the position of a servant to that of a professor in the College of Navarre, and whose "New Logic," as afterwards edited by our own Milton, became a text-book throughout Europe, was harassed for years in his chair, banished, and at last brutally slain in the massacre of St. Bartholemew. And Giordano Bruno, the guest of Sir Philip Sydney, the critic of Shakspere and the friend of Luther, an academic knight-errant who became pupil and master by turns in all the schools, was expelled as a heretic from Geneva and burned as an atheist at Rome. At the same time, there were not wanting martyrs of the reformed school of Aristotle. Bernardin Telesius, a great Italian thinker, who was the first to attack the scholastic logic in a Baconian spirit, was pursued with calumnies which hastened his death, and afterwards canonized only in the Index Expurgatorius of the Inquisition. Julius Vanini, a paradoxical freethinker, as he has been called, whose "Amphitheatre of Providence" had been avowedly written against atheism, was himself condemned as an atheist to the flames, and has not yet recovered from the infamy of his fate. And Thomas Campanella, a contemporary of Bacon, whose reform he anticipated, and of Galileo, whom he defended from a dungeon, was seven times tortured and immured in more than fifty different prisons.

But it was when these new philosophical doctrines began to penetrate among the more practical investigators of the

several sciences, and to show their fruits in the grand discoveries of modern times, that the parties, as it were, came into close quarters, and the most bitter conflicts ensued. Theology by this time had become rash enough to forsake the vantage-ground in her own domain, and pursue her antagonist into a region of irresistible facts, where her war of dialectical notions could no longer be waged, and she was sure to meet only with repulse.

Geography was the field on which the first of these battles was fought. Since the days of Cosmas, in the sixth century, it had been the orthodox faith that the earth was a sea-girt plain, beyond which no mortal could pass; and when in the eighth century Polydore Virgil of Ireland had revived the pagan notion of antipodal races on the other side of the globe, all Christendom rang with the quarrel. Boniface, the Apostle of Germany, found it inconsistent with his scheme of missions to imagine in such a nether world other heathen than those to whom he was preaching the gospel, and invoked a missive from Pope Zachary, which put the dangerous heresy at rest. But, now that bold voyagers from Spain were actually seeking new lands beyond the seas and sailing to the West in hope of returning from the East, it seemed that the very anger of Heaven had been defied. Columbus, after vainly pressing his suit from one royal court to another, had at length to embark for the new world with the Council of Salamanca invoking the anathemas of patriarchs, prophets, apostles, and fathers upon his impious daring. Magellan, as he sailed through the straits and beneath the stars, which still bear his name, over the wide Pacific, could only solace himself amid the horrors of the long voyage by reflecting that, though the fathers held the earth to be flat, yet her shadow in the moon's eclipse was round, and after incredible hardships at last fell a martyr in sight of his goal. And even when the grand discovery was complete, the new hemisphere was but claimed as a conquered domain of the Church, and its helpless tribes with their crude civilization exterminated as out of the pale of the Adamic races.

Astronomy next opened a still wider and more hotly-contested field. It had been taught from the time of Justin Martyr, that the crystalline heavens revolved around the solid

earth, forming thus a wonderful camera for the abode of man; and though, in the fifteenth century, the Pythagorean doctrine of the solar system had been recalled by Nicholas of Cusa, yet in the absence of any proof, it had been dismissed as an exploded error of antiquity; and even after mathematical reasonings had been advanced at a later period, by the great Nicholas Copernicus, in his treatise on the "Revolutions of the Celestial Orbs," the hypothesis, as it was called, had been actually allowed for half a century in the universities of Italy as a sort of paradox of science not likely to disturb the popular faith. But now that the telescope of Galileo was affording sensible evidence of the motions of planets and satellites around the sun, and his "Sidereal Messenger," announcing the grand discovery to the whole world, it seemed to the guardians of the Church that the very earth was about to be torn reeling from its centre, and all men's opinions revolutionized with it. Cardinal Bellarmine, the General of the Inquisition, at the head of a council of theologians, pronounced the Copernican theory heretical and false, and Pope Paul V. solemnly anathematized it as an opinion that must neither be taught nor defended. And the Synod of Dort echoed back the fulminations of the Vatican. Every school-boy knows how Galileo, gray-haired and worn with suffering, was brought from a dungeon and perhaps from torture, before the grand tribunal, and there, on his knees, with his hands upon the Holy Gospels, compelled to abjure the opinion of the earth's mobility as erroneous, heretical, and contrary to Scripture. The heroic Kepler, whilst pursuing the discoveries of Galileo, with the speculations in his "Harmonies of the Universe," was likewise persecuted in Catholic and Protestant countries by turns. And even when Newton had completed the whole masterly demonstration, his immortal work was placed in the forbidden list of the Inquisition, and for a century afterwards proscribed in the University of Spain. In fact, it is not many years since the name of Galileo was expunged from the catalogue of heretics, or the monument of Copernicus allowed to have a characteristic epitaph.

Geology, anthropology, and other sciences were not assailed until later times. Meanwhile, too, the state of parties

was changing. The spirit of religious persecution was melting away before the growing tolerance of the age. The Church was rent into two great hostile fragments; Catholicism was forced back into closer alliance with the patristic and scholastic systems; Protestantism was organized only in scattered sects amid polemical feuds; Infidelity was secretly spreading on all sides from the leaders to the ranks, both Catholic and Protestant; and thus at length Theology, true Theology, like the remnant of an invading army broken by repulse, dissension and mutiny, was forced to retreat into her own domain, where she has since been engaged in building apologetical bulwarks around the essential faith.

Philosophy, however, did not always remain on the defensive, but at length recoiled against theology. Even in her most abject state she but lay crouched under the foot of that stern mistress as a sullen sphinx whose riddles had not been solved, and no sooner did she gain her freedom than she seemed about to turn and devour her conqueror. Long before infidelity dared appear, there had been heard through the dialectics of Roscelin and Abelard, as in unconscious menace, suppressed murmurs of the sceptical spirit. As early as the fifteenth century Nicholas of Cusa, in his "Apology for Learned Ignorance," had assailed the foundations of all knowledge, divine as well as human; and John Wessel of Gröningen, the Light of the World and Master of Contradictions, had unmasked the scholastic sophistry and even foretold a returning dawn of common sense and reason. And in the first part of the sixteenth century John Reuchlin had rescued Jewish learning from the destroying hands of the monks, with a triumphant exposure of their ignorance and bigotry; Agrippa of Nettesheim, in his "Vanity of the Sciences," had scourged their conceit and pedantry with cynical invective; and Erasmus of Rotterdam, in his "Praise of Folly," had turned upon them the contempt of the age in sallies of satirical humor. But it was not until the Reformation had fully effected the liberation and independence of philosophy, that she began to be drawn into alliances hostile alike to Catholicism, to Protestantism, and to Christianity itself. Hitherto she had moved obsequiously within the pale of the

Church, often in the disguise of the most demure orthodoxy, and never beyond the restraints of virtue; now she was emerging upon the broad stage of the world, with soldiers, civilians, and nobles in her train, and among them were some who only abused their freedom in her name or concealed their unbelief with her charms. It was in this period, whilst the ancient schools were yet lingering, flourished Pomponatius of Mantua, an Aristotelian infidel, who masked his impiety and vice under outward reverence to the Church; Montaigne of Bordeaux, a Pyrrhonic sceptic, whose sprightly "Essays," more pagan than Christian, have been styled the breviary of free-thinkers; and Herbert of Cherbury, a Platonic theist, in whose "Religion of the Gentiles" the highest form of classic virtue was strangely blended with the fervor of his more saintly brother, the quaint poet of the "Temple." And in the seventeenth century, whilst the modern schools were still forming, appeared Hobbes and Shaftsbury, disciples of Bacon, and the forerunners of English deism; Le Vayer and Bayle, disciples of Gassendi, and the forerunners of French atheism; and Leibnitz and Spinoza, disciples of Des Cartes, and the forerunners of German pantheism. At the same time, long before these philosophical extremes had been reached, the more practical cultivators of science, engaged in special researches, began to be conscious of the rupture which had been growing unwittingly among their theoretical leaders, as was shown at first in a certain tone of studied respect or mock deference which they felt obliged to assume towards the authorities of the Church.

"In theology," said Kepler, "we balance authorities; in philosophy we weigh reasons. A holy man was Lactantius, who denied that the earth was round; a holy man was Augustine, who granted the rotundity, but denied the antipodes; a holy thing to me is the Inquisition, which allows the smallness of the earth, but denies its motion; but more holy to me is truth; and hence I prove by philosophy that the earth is round, inhabited on every side, of small size, and in motion among the stars,—and this I do with no disrespect to the doctors." It has even been questioned whether Galileo was quite the martyr which so often figures in academic oratory,

now that we are told by Roman divines themselves that his recantation was a mere decorous form conceded by one party to the scruples of another, and it is even hinted that the famous saying, "And yet the earth does move," with which he rose from his knees, instead of being the heroic soliloquy of a mind cherishing its conviction of the truth in spite of persecution, may have been uttered as a playful epigram in the ear of a cardinal's secretary, with the full knowledge that it would be immediately repeated to his master. Certain it is at least, that in his "Dialogues on the System of the World," he speaks sarcastically of a "wholesome edict promulgated at Rome which, in order to silence the perilous scandals of the present age, imposed silence upon the Pythagorean mobility of the earth."

It is well known that Descartes only avoided the fate of Galileo, at the hands of Cardinal Richelieu and the Sorbonne, by a prudent reserve respecting his astronomical opinions, which has been more censured than praised. Perhaps even Bruno and Vanini, who at an earlier date had held like opinions, might have escaped martyrdom as philosophers, had they not chosen to brave the ecclesiastical penalties of their speculations. Andrew Vesalius, sometimes claimed as a martyr of science for his sufferings in the cause of demonstrative anatomy, seems to have fallen under the censure of the Inquisition of Madrid as much through misfortune and vulgar prejudice as from any religious intolerance. And Michael Servetus, but for a fatal proclivity to theological speculations and the blasphemy with which he provoked the Council of Geneva, might have been remembered in this more tolerant age chiefly as a discoverer of the circulation of the blood.

But whilst such early harbingers of science avowed no direct hostility to religion, it was not long before some of their successors, of a less devout spirit, were invading, in the name of free thought, its most sacred mysteries. The supernatural facts of Christianity appearing inconsistent with a scientific conception of nature, were treated by them as mere inherited fables of antiquity, or classed with feats of magic and sorcery, as if in malicious retaliation for the stigma to which the phy-

sical researches had been so long subjected whilst under the ban of the Church. Shakspere, with a kind of prophetic sagacity, seems to have discerned such scepticism as the rising spirit of his time:

"They say, miracles are past; and we have our philosophical persons to make modern and familiar, things supernatural and causeless. Hence it is that we make trifles of terrors, ensconcing ourselves into seeming knowledge, when we should submit to an unknown fear."—(ALL'S WELL. Act ii. Sc. iii.)

And soon the movement reached a development which embraced all Europe within its sweep and bore away the most sacred land-marks in its tide.

In England, during the seventeenth century, from the very feet of Bacon and Locke, went forth the school of deists arraying experience against revelation, with the courtly satire of Shaftesbury, the perverse ingenuity of Woolaston, the coarse raillery of Mandeville, the elegant verse of Pope, the blighting sarcasm of Bolingbroke, the insidious irony of Gibbon, and the subtle scepticism of Hume. In France, during the eighteenth century, from the same empiricism as inherited from Gassendi and Bayle and pursued by Condillac and D'Alembert, sprang that brilliant coterie of wits, Diderot, Helvetius, Voltaire and Rousseau, striving to organize science against religion in the tomes of the Encyclopædia, at the banquets of D'Holbach and under the patronage of Frederick the Great. And at length, towards the close of the last century, what had begun in a reaction from the English Reign of Saints precipitated the French Reign of Terror, and the goddess of reason, in the person of lust, was enthroned at the very altar of the Church.

And thus, in the course of centuries, the positions of the two antagonists had been completely reversed. The faggot of the Inquisition had been exchanged for the guillotine of the Revolution. And theology, having begun with a vain attempt to suppress reason by authority, had ended with a defensive struggle for her own life; whilst philosophy, having begun with a legitimate revolt of reason from authority, had ended with a wild assault against the very citadel of the faith.

The reformation of Christian science has brought with it all the boasted advantages of our modern civilization; on the

one side, in the wake of the scientific movement, the discovery of America, the invention of gunpowder, printing, steam, telegraphy, the manifold marvels of physical art, industry, and culture; on the other side, in the wake of the religious movement, the colonization of America, the growth of popular institutions, the multiplication of presses, schools, and missions, the great moral achievements of piety, charity, and philanthropy. But, at the same time, it has been attended, thus far in its progress, with the incidental evils of an unprecedented sectarianism in religion, infidelity in science, and consequent schism in philosophy, for which no adequate remedies have yet been found.

Reserving such questions for following lectures, we are now ready to collect from our historical review several results which at this point should be clearly fixed in the mind. On glancing back over the path which we have traversed, it will be seen that the course of controversy between the scientific and the religious spirit for the last eighteen hundred years has been growing more and more critical, like the skirmishing which leads to systematic warfare, until at length the field is now cleared, the weapons forged, and the rival interests staked as for a last decisive encounter.

For the field of this warfare, we behold the lines drawn between the Natural and the Supernatural as the respective provinces of science and religion. The region of phenomena, laws, and forces is seized by the former; while that of divine manifestations, causes, and purposes is held by the latter. Never before has this great distinction been brought so boldly into view. In the early ages all religion, Pagan as well as Christian, claimed to be miraculous and divine, and science was as yet too crude and vague to oppose it with the notion of natural law. If there were some of the Greek physicists who had begun to supplant mythologic with scientific views of nature, yet their theories soon died out for want of empirical research or at length became overlaid with patristic traditions. In the middle ages the wildest supernaturalism reigned on every side. Not only was the whole church filled with the shrines and miracles of saints, angels, and martyrs; but the world outside was peopled with demons, fairies, and monsters,

and the few brave spirits who strove to exorcise them with the wand of science were themselves stigmatized as but children of Satan. But, in modern times, with the rise of the inductive spirit, a growing naturalism has been pushing the reign of law against that of caprice, from one set of phenomena to another, until at length it seems to have become an open contest between the scientific and religious conception of the universe as to which shall hold its ground against the other. The great questions to be settled are, whether the Supernatural can be explained and resolved into the Natural; or whether they form distinct and irreconcilable orders of facts; or whether though distinguishable, they may not be analogous and congruous, having proceeded from the same Intelligent Author as but parts of one and the same grand system.

For the weapons of this warfare, we behold Reason and Revelation wielded as the several prerogatives of science and religion. The former claims the human mind as the sole instrument of all knowledge; whilst the latter offers the aid of the divine mind in disclosing much that would otherwise be unknown. And this is a division of functions which has never before been urged with such clearness and jealousy. In the early ages, the fathers sought to recommend the Christian revelation as itself solving the problems upon which all philosophy had hitherto been vainly exercised, and even the infidels of the time were fain to rival the prophets and apostles with a kind of mystic theosophy. In the middle ages, the schoolmen were wont to mingle anathemas with their very dialectics, and chaining reason to the feet of authority set its lessons for it in the writings of the fathers, whilst the book of nature was sealed up as a forbidden volume. But the modern rationalists, turning their Protestant freedom into license, have been invading one region after another lying beyond the natural reach of our faculties, until at length they seem ready to usurp the throne of Omniscience itself. It is plainly mooted, whether Reason is not outgrowing and superseding Revelation; or whether, as diverse organs of the finite intellect and the Infinite Intellect, they are doomed to ceaseless conflict, or whether, however antagonistic, they may not still cooperate as joint factors of knowledge in all fields of research.

And for the issues of this warfare, we behold Civilization and Christianity staked as clashing interests of science and religion. On the one side are the temporal concerns of society, its art, politics, and philosophy; and on the other side are the eternal interests of the individual, his creed, life, and worship. And this, too, is such a rupture of parties as our times alone have witnessed. In the primitive culture, under imperial Rome, the Church was in false alliance with the State, worship was wedded to a pagan art, theology was mixed with heathen philosophy, and Christianity embarked in a corrupt civilization. In the mediæval culture, under papal Rome, the State was simply prostrate before the Church, art was in bondage to a false worship, philosophy was subdued by theology and civilization overpowered by a corrupt Christianity. But in modern culture since the Reformation, the Church has become divorced from the State, art estranged from worship, science detached from religion, and civilization more or less at variance with Christianity. And now it remains to be seen whether the two sets of interests are involved in an exterminating warfare by which the whole existing Christianity and civilization, like the ancient faith and culture, shall be whelmed in a common ruin; or whether, as science becomes reconciled to religion, art shall be resolved into worship, the State be merged in the Church, and a new Christian civilization prevail over heathen barbarism throughout the earth.

CHAPTER II.

MODERN ANTAGONISM BETWEEN SCIENCE AND RELIGION.

The first view of a distant battle-field could only astonish and bewilder any one wholly unacquainted with the plan of the action. It would matter not how well he had studied the causes of the conflict or the great interests at stake. If he knew nothing of the opposing forces there arrayed, of their orderly disposition over the field, and of their successive manœuvres, he would be at a loss where to look for friend and foe, or how to estimate the ebb and flow of the struggle; and there would appear before him nought but one wide scene of tumult, filled with hurrying crowds, the smoke and din of arms, confused war-cries, heroic charges and desperate repulses, without intelligible aim or result.

And so it would be a sufficient reason, were there no other, for our proposed sketch of philosophical parties in modern times, that it may tend somewhat to relieve this whole subject of its vagueness and obscurity. So long as any opinion or movement is discussed in the abstract, under the dry forms of logic, it will lack that freshness and interest which it acquires when it passes from the region of theory into that of practice, and becomes concrete in a man or a party espousing and defending it. We are, indeed, only beating the air while we contend against notions which no one has ever thought of holding, or make distinctions which as yet appear purely hypothetical and impracticable; but if we can show all the possible shades of opinion concerning a question to be also actual; if

we can cite well-known writers and systems as exemplifying them; if we can even group together the great leaders of modern thought, with their respective followers, as already taking sides upon that question, in each of the sciences on the battle-ground of philosophy; in a word, if to our review of past conflicts between Religion and Science we can now add a survey of the present parties issuing therefrom, and of the controversies still pending between them, we shall then have before us the living men and interests of our own historic period and the actual stage whereon we, too, are to perform our several parts.

Now, although there may have been as yet nothing like extended organization or concert underneath the vast medley of modern philosophical opinions respecting the great question before us, yet we shall find that, throughout the educated mind of the age, that mind which garners the past and forecasts the future, there has been a steady, silent growth of feelings and beliefs which at least admit of being defined, compared and estimated. We may see them reflected and contrasted in all modern literature so plainly that the whole community of the learned, from our present point of view, will appear marshalled into parties or classes, in some one of which every leading school, system, and opinion may be found.

Of such parties, the two most marked are those who are averse and those who are inapt to the great work of harmonizing the knowledge of man with the knowledge of God; and these parties are again subdivisible according to the kind and degree of such aversion or unfitness. So that, as we proceed, four distinct classes will emerge into view, in the order in which we name them: 1st. The Extremists, who would render science and religion hostile and exterminant. 2d. The Indifferentists, who would leave them separate and independent. 3d. The Impatients or Eclectics, who would combine them prematurely and illogically. 4th. The Despondents or Sceptics, who would abandon them as contradictory and irreconcilable. And each of these classes will divide into wings, or correspondent groups of scientists and religionists, according as the point of departure taken is scientific or religious in thus opposing, sundering, combining, or abandoning the

two interests. We devote this chapter to the first of these classes.

To the extremists belong such religionists and scientists as depart towards the extremes of mutual opposition, the one by forcing revelation into the province of reason, and the other by forcing reason into the province of revelation. They are the poles apart as to every question into which Scripture and Science can enter. They insist, each against the other, upon exclusive jurisdiction throughout the entire domain of truth; or, if they admit any common ground, it is to be viewed as a battle-field, in which there can be neither peace nor truce, but only deadly warfare until one or the other is exterminated. In short, they are the men who carry the black flag in the field of philosophy.

Let us glance more particularly at their respective positions, state some of the controversies pending between them, and estimate their common errors.

On the one side is the religious extremist or extreme religionist, who would invade the whole province of reason. The Scriptures he takes to be a revelation, not merely in respect to strictly theological questions, but also in respect to such purely scientific questions as the construction of the material universe, the formation and antiquity of the globe, and the physical and psychical organization of mankind. The allusions of the sacred writers to such matters are wrought by him into a kind of scientific creed which he is ready to maintain in defiance of all opposing theories, and to bind upon the conscience as pure dogma or mystery of faith; and even when his interpretation runs against discovered facts, rather than change it, he is fain to suppose a miracle wrought where one would have been as useless as improbable. Theology is for him a stern mistress of the sciences, rather than their adored queen, and holds them in abject pupilage at her feet.

On the other side is the scientific extremist or extreme scientist, who would invade the whole province of revelation. The natural reason he deems competent to deal, not only with scientific questions, but even with the high theological problems of creation, atonement, and judgment; of duty, destiny, and eternity. By means of its crude surmises he frames a

kind of theological theory, which he weighs against all inspired teaching, and claims to support with purely natural evidence; and when any of his discoveries or speculations appear inconsistent with a received interpretation of Scripture, he is in haste not merely to unsettle that interpretation, but to impugn the very fact of inspiration itself, together with the entire doctrinal system which it upholds. Science becomes in his hands a crazed parricide of Theology, rather than her sane daughter, and with every new discovery aims a reckless blow at the very breasts which nurtured it.

We have already found examples of this ultraism, under each of its antagonistic phases, very early in the history of Christian science, but the spirit has by no means died out in modern times, having in fact acquired a momentum from its past conflicts which is already carrying it to the wildest extremes. This will appear by briefly recalling the chief features of the successive epochs as before reviewed. During the age of the Gentile philosophers, we have seen that religion and science dwelt apart in a state of local seclusion, and could not as yet even appreciate each other's mission: it had become the characteristic traits of their representative races, that the Jews required a sign and the Greeks sought wisdom. During the age of the first Christian converts, science and religion met as strangers, mistaking each other for foes and waging a death struggle for pre-eminence: it was then that the Christians despised philosophy as the wisdom of the world, and the philosophers despised Christianity as a superstition of the Jews. During the age of the Greek fathers, philosophy had subjugated theology, and religion became corrupted with false science: it was then that Origen sat at the feet of Plato, blending Pagan speculation with Christian doctrine. During the age of the Latin schoolmen, theology had subjugated philosophy, and science became corrupted with false religion: it was then that Aristotle sat at the feet of Augustine, weaving Christian tradition into Pagan learning. During the age of the reformers, theology and philosophy were torn asunder, the one assailing with bitter persecutions, and the other recoiling with bloody revolutions; until at length amid the confusion of parties which has ensued, we behold at the one extreme a

species of bigotry which assumes the name of religion, and at the other a form of infidelity which masks itself in the garb of science. And now the classes first to be surveyed are those who simply accept these extremes which history has precipitated upon us and drive them to their final consequences, as we shall proceed to show, not merely in each of the sciences, but throughout the whole domain of philosophy, and ultimately into the most practical spheres of civilization.

In this sketch the terms infidel and apologist will be used in their received sense, to denote respectively the assailants and defendants of revealed religion as distinguished from mere natural religion or irreligion; and the aim will be to trace impartially that conflict between them which has been presented on the scientific side by such writers as Baden Powell, Lecky, Theodore Martin, Lange, Draper, and Andrew White; on the religious side, by such writers as Farrar, Lechler, Bartholmèss, Ebrard, Hettinger and Luthardt; and on both sides, by the numerous writers who have treated of special religious controversies in the different sciences. It need scarcely be premised that the few infidels who have perverted science are no more strictly representative than the few apologists who have disgraced religion, and that taken together they form but inconsiderable factions in contrast with the true votaries of either interest.

Entering first the field of the physical sciences, we shall there behold the battle raging in one science after another, in astronomy, in geology, in anthropology; from one country to another, from Italy to England, to France, to Germany, to America; through successive generations, like a hereditary feud which lingers after its original actors may have been forgotten.

The Conflict in Astronomy.

From the rational side of astronomy there have been repeated attacks against the revealed doctrine of the heavens. At the dawn of the science it was perverted to infidel uses. Pomponatius, in a work on natural philosophy, while yet the Ptolemaic system reigned, blended it with astrological views of planetary influence, which were at variance with the Mosaic

doctrine of signs and seasons, and subversive of the whole miraculous element in Christianity. Bruno, as an early advocate of the Copernican theory, admitted before the University of Oxford, that it was incompatible with the Scriptures, and sought to base its discovery of innumerable worlds in a kind of materialistic pantheism, for which as yet no other name than atheism had been found. Campanella, though afterwards a zealot for the papacy, wrote an apology for Galileo, which caused him to be classed with the assailants of Christianity. And the cruel persecution of these first martyrs of science is explained, though surely not justified, by the sarcastic and often contumacious tone which they assumed towards sacred subjects and authorities.

The English free-thinkers, however, could more safely array the new astronomy against revealed religion. Foulke Greville seems to have held a symposium for the liberal discussion of the Copernican system, which Bruno has fully reported under the suggestive title, "An Ash-Wednesday Feast." Shaftesbury, in his "Characteristics," argued that the apparent lack of final cause or intelligent design throughout the infinity of worlds, made the earth an insignificant exception, and formed an overwhelming argument on the side of atheism. Bolingbroke, according to Whewell, ridiculed the Newtonian theory of gravitation, as only based upon an occult miracle, and for a time misled Pope into the shallow sneer:

> "Philosophy that reached the heavens before,
> Shrinks to her hidden cause and is no more."

Thomas Paine, in his "Age of Reason," scoffed at the idea of a redemption of our little world by an incarnate God, as utterly discredited by the grandeur of the Creator and the immensity of His creation.

But it seems to have been reserved for some of the French astronomers to give the science an all but infidel expression. Gabriel Fontanelle, the brilliant Secretary of the Academy, who wove its laurels at the same time that he dispensed its learning, composed his elegant "Dialogues on the Plurality of Worlds" in a thoroughly undevout spirit, suggesting the doubts which were to be more coarsely expressed by

Paine. Lalande, another popular astronomer of the time, proclaimed atheism in the Pantheon with the red cap on his head, and in the preface to his treatise classed Derham's Astro-theology, and all such religious writings upon the celestial scenery, with Fontanelle's Dialogues, as mere amusing speculations. La Place, the worthy successor of Newton in everything but his piety, surmised in his "Celestial Mechanics" that the solar system might have been more advantageously adapted to human welfare; and when asked by Napoleon why there was no mention of a God in his "System of the World," replied, that he no longer needed that hypothesis. And as if to complete this cycle of impiety, Auguste Comte, in his Popular Astronomy, has dared to pronounce the grand theme of the Psalmist obsolete, by affirming that the heavens declare no other glory than that of Hipparchus, Kepler, Newton, and all those who have aided in establishing their laws.

At length such undevout astronomy has been pushed to its mad extreme by the German rationalists of our day. Ballenstedt, in his shallow work on the primitive world, renewed the deistical objections drawn from the infinite extent of the universe as contrasted with the obscure speck which man inhabits; and Bretschneider declared that, by the overthrow of the old Ptolemaic system, all the distinctive doctrines of the Christian religion, the incarnation, atonement, ascension, final judgment, heaven and hell, have fallen to the ground like the play-houses of children in a storm. Carl Michelet, consistently with his pantheistical idealism, has maintained in his Lectures on Divine Personality and Human Immortality, that there is no God and no spirit outside of our planet, and that sun, moon and stars are bare rocks of light, floating in the heavens, and serving but as tapers along the development of the Hegelian philosophy. And David Strauss, in both his earlier and later works, treating of the Christian Faith in its conflict with modern science, declares that the discovery of other stellar universes beyond our little Copernican system, has given the finishing blow to the whole Jewish and Christian conception of heaven with its throne and angels, and left naught but a crowd of dissolving suns and planets, amid which man must live and die, literally without God and without hope in the world.

From the revealed side of the science, however, quite as frequent attacks have been made upon the rational theory of the heavens. No sooner had Copernicus published his treatise than it was placed in the Index of prohibited works for censure, as both false in philosophy and contrary to the Holy Scripture. Fromundus of Antwerp, under sanction of the Theological Faculty of Louvain, defended this decree of the Inquisition in a work styled "Anti-Aristarchus," with citations from the Scriptures and fathers, and supposed scientific objections; such as that the wind would always blow from the East, and buildings fly off the earth, if it were in such rapid motion. A learned but bigoted Catholic, Schoppius, who witnessed the martyrdom of Bruno, wrote to a friend, with sardonic humor, that the unhappy man had gone to relate in those worlds which he imagined, how the Romans treat impious men and blasphemers. Father Caccini received Church promotion for preaching a denunciatory sermon against Galileo from the punning text, "Ye men of Galilee, why stand ye gazing up into heaven?" Cardinal Bellarmin, with other learned doctors of the Inquisition, brought against him the theological argument, that his theory would subvert the whole Christian scheme of salvation, especially the doctrines of the atonement and incarnation, by robbing the earth of its moral importance as the centre of the world between heaven and hell, and by suggesting other races in the planets, who were not descended from Adam, and for whom Christ had not died. The Jesuit, Melchior Inchofer, pronounced the opinion of the earth's mobility the very chief of heresies, most abominable and pernicious, less to be tolerated than an argument against the existence of God or the immortality of the soul. Bossuet declared his adhesion to the Ptolemaic system as alone Scriptural and orthodox, even after the discoveries of Galileo, Kepler and Newton had been almost everywhere accepted. And from that day to this, in order to save the dogma of infallibility, Catholic apologists, such as Marini, De l'Epinois, and De Bonald, have been striving to shift the blame from the Church to Galileo, from the Cardinals to the Pope, from the Pope to the Cardinals, from both to Holy Scripture itself.

But the German and French Protestants were not less

rash in their apologetics. Luther, with characteristic bluntness, denounced Copernicus as an upstart astrologer, who sought notoriety by trying to overturn the whole science of astronomy, as if the earth could revolve around the sun, when the Scriptures tell us that Joshua commanded the sun to stand still, and not the earth. The mild Melancthon, in his "Elements of Physical Doctrine," not only reasoned against the Copernican theory with Scriptural and scientific arguments, but held that the civil authorities ought to suppress such a wicked and atheistical opinion. Calvin introduced his commentary on Genesis by stigmatizing as utter reprobates those who would deny that the circuit of the heavens is finite and the earth placed like a little globe at the centre. The orthodox Turrettin, while yet Newton was completing the demonstrations of Kepler, issued from Calvin's chair a "Compendium of Theology," in which, with a scholastic array of proof texts, objections and answers, he argued that the heavens, sun and moon are in motion, but the earth is at rest. And at a still later period the German Rector Hensel, wrote a schoolbook against the new astronomy, entitled "The Restored Mosaic System of the World," and designed for the praise of the great Creator, the defence of the truth and the religious instruction of the young.

The English apologists, too, were still reckless, though they entered the battle with a better knowledge of the field. A learned layman, John Hutchinson, in a collection of works with such opprobrious, but significant titles as "Moses' Principia" and "Moses without the Principia," led a party of Cambridge divines against Newton himself on the very theatre of his triumphs. Dr. Samuel Pike, of the same school, published a "Sacred Philosophy," in which he aimed to extract from Holy Scripture the true principles of natural philosophy, in opposition to the Principia of Newton. Numerous Hutchinsonian commentators, such as Bishops Horne and Horsely and President Forbes, have also criticised the Newtonian theory in a more or less polemic spirit. Dr. John Owen, the great Puritan preacher, termed the Copernican system a delusive and arbitrary hypothesis, contradicted by the obvious sense of the Scriptures and irreconcilable with their

teachings. The founder of Methodism, John Wesley, in a sermon on the VIIIth Psalm, after Derham and Huyghens had associated a plurality of worlds with revealed truths, termed that opinion the palmary argument of infidels, and declared he would doubt it, even though it were allowed by all the philosophers in Europe. Professor De Morgan includes in his "Budget of Paradoxes" a variety of anti-Copernican treatises, all written in the supposed defence of Biblical truth. Indeed, it was not long since a Mr. Ferdinand Fitzgerald gravely proposed to establish in opposition to the Newtonian astronomy, a league, a journal and a system of scientific surveys with the view of demonstrating that the Bible-earth is not a rotating globe, but a flat, motionless plane. And though by this time all Christian literature has become leavened by the new astronomical ideas, and enriched with magnificent proofs and illustrations of the divine glory in the heavens, yet now and then may still be heard mistaken protests, like the idle shots of a retreating army.

Astronomy has thus been made a battle-ground by both parties of extremists for nearly three centuries, until every part of the science has been fought over and contested; sometimes with infidel triumphs, which have been no gain to science, and sometimes with apologetic defeats, which have proved better than victories to religion.

The Conflict in Geology.

From the rational side of geology also have come occasional assaults against the revealed doctrine of the earth. The battles in geometry and geography, for the true figure and features of the globe, having been won, terrestrial physics and chemistry began to breed new controversies, from their popular association with witchcraft and alchemy. If great divines, like Pope Sylvester, Albert of Bollstadt, and Roger Bacon could be charged with Satanic art for their pursuit of these sciences, it was surely not surprising that less orthodox physicists who dabbled in magic, such as Cardan, John Baptist Porta and Leopold de Medici, should suffer the same persecution, or escape it only by hypocritical disguises. And especially would this be so, when physical research began to bear

upon palæontology. Sir Charles Lyell suggests, that the early Italian geologists, Vallisneri, Scilla and Generelli, who held views of minerals, fossils and strata inconsistent with the received Mosaic cosmogony, did not come into collision with the Church authorities, because they practiced a dissimulation warranted by the fate of Galileo, if not actually tolerated by the Papal court.

There was afterwards, however, less need of such reserve among the so-called brave spirits of the French Academy. Buffon, indeed, may have somewhat compromised his well-known naturalism, by declaring, in his guarded recantation to the Sorbonne, that his "Theory of the Earth" was not opposed to the writings of Moses, but only offered as a pure philosophical supposition. But the encyclopædists, Diderot, D'Alembert and D'Holbach strove to organize all the physical sciences so thoroughly in the interest of pantheism and atheism, that Rousseau himself withdrew from their company. Voltaire, finding that orthodoxy claimed the Alpine fossil shells as relics of the Deluge, scoffed at them as mere fantastic freaks of nature, or scollops dropped by returning Crusaders, and satirically accused the Scripture geologists, Burnet and Whiston, of destroying and renewing the earth which Descartes had made, as easily as the scene changes in a play.

In English geology but few such infidel missiles would seem to have been hurled directly at the Scriptures. The false Mosaic cosmogonies have been demolished in the interest of religious truth by enlightened divines such as Buckland, Pye Smith and Hitchcock, and devout laymen such as Dawson, Dana, Hugh Miller and Guyot, rather than by freethinking men of science. If the great Scottish geologist, Hutton, connected unscriptural views with his Plutonic theory of strata and his doctrine of the indefinite antiquity of the globe, they are not expressed in his writings, though often charged upon him by his critics. Lyell very seldom spoke of the Biblical geologists, yet evidently relished the peculiar irony which had made Burnet's "Sacred Theory of the Earth" a favorite at the Court of Charles II. and pointed Butler's jest in Hudibras:

"He knew the seat of Paradise,
Could tell in what degree it lies;
And, as he was disposed, could prove it,
Below the moon or else above it."

Professor Huxley, with less reserve, has not only referred to such vagaries of commentators, but to Genesis itself, as the cosmogony of the semi-barbarous Hebrew, to be classed with the myths of paganism.

And some of the German infidels have still more boldly fought their way with geological weapons to the same extreme opinion. After the rationalistic critics of Scripture, from Eichorn to Baur, had striven to reduce the hexæmeron, or six days' creation, to a mere pious fraud for the institution of the Jewish Sabbath, or a legendary cosmogony of oriental fancy, it was natural for geologists of a sceptical turn to join in the attack with a cross-fire from the scientific side. Accordingly, Humboldt in his Cosmos, and Burmeister and Vogt, as materialists, in their natural histories of creation, disdained the Mosaic doctrine of a Creator as a mere childish tradition of the people inconsistent with the eternity of the earth, and sneered at the creative fiats as more like the dramatic edicts of a constitutional prince than a worthy account of the great geological epochs and catastrophes which were proceeding. Schleiden, as an idealist, in treating of the materialism of modern German science, was fain to charge it upon the fables of the so-called Biblical history of the Creation and Deluge, which we are taught from childhood. And Strauss, ever ready to fling any stone, exposed the seemingly unscientific character of Genesis, the creation of vegetation before the sun, of the earth before the fixed stars, of plants and animals in a few hours, and ridiculed the conciliatory schemes of divines as attempts to make a Hebrew seer speak like a modern geologist.

But from the revealed side of the science, meanwhile, have come continual assaults against the rational theory of the earth. As the early geographers, Columbus and Magellan, had been opposed with Scripture texts and church decrees, so the physicists and chemists, such as Porta and Becker, were in their turn accused of practicing the forbidden arts of sor-

cery, or resorting to an alchemy which Solomon had discredited by sending ships to Ophir for gold. After Fracastoro and Scilla began to suggest the marine and animal origin of mountain fossils, the curious objects were still treasured in the Vatican cabinets as debris of Noah's flood, or off-cast moulds of the Creator, left for the trial of our faith. The regular growth of strata by aqueous agencies, as suggested by Vallisneri, was held to be inconsistent with the dogma of St. Jerome, that the earth had been disordered and cursed for man's sake. And though at the corrupt Court of Clement VII., the Carmelite Friar, Generelli, could lead the Academicians in ridiculing the Protestant cosmogonies of Burnet and Whiston, yet this was but a truce before the warfare on other fields. The Theological Faculty of Paris had already put chemical science under the ban as a black art, and afterwards condemned the great mineralogist, Bernard Palissy, and other French geologists, for denying the miraculous origin of fossils and the universality of the Flood. The same authorities at a later period censured Buffon's theory of the gradual formation of continents as incompatible with the creative days of Moses, and required him to insert his courteous disclaimer in the next edition of his works. The Protestant geologist, De Luc, in replying to Hutton, prefaced his treatise with remarks upon the infidel tendencies of the science in having become so anti-Mosaical.

But it was among the English apologists that the attack at length grew fierce and desperate. The sacred cosmogonies of Burnet and Whiston, referring the creation to six literal days, and the Deluge to the shock of a comet or some such catastrophe, had become as deeply imbedded in orthodoxy as once were the astronomy of Ptolemy and the Christian geography of Cosmas, and any different views were quickly pronounced heretical and unscriptural. The Edinburgh ministers charged the Huttonian theory of a secular growth and decay of strata with atheism and infidelity, disguised under the pagan notion of the eternity of matter. Devout laymen, such as the distinguished mineralogists, Kirwan and William, also deprecated it as nothing less than an attempt to depose the Almighty Creator from His office. The Wood-

wardian chair of mineralogy, with its Hutchinsonian collections, stood resisting the growing evidence of any organic remains before Adam, as contrary to the Scripture statement that death came into the world by man; and even after the fossiliferous strata had been tabulated, they were still claimed by Granville Penn and M'Farlane as successive deposits of the Flood, or buried ruins of the Fall. The Rev. Mellor Brown, as if to cut the geological knot, desperately declared it his highest conception of creation that fossils, together with living structures, should start into being by a single fiat of Almighty God. And another "English Clergyman," mentioned by Hugh Miller, carried such reasoning to a fit climax by appealing to certain fossils, supposed to have been visibly forming under recent influences, as "created on purpose to silence the horrid blasphemies of the geologists." American apologists, also, such as Professor Stuart of Andover, and Dr. David Lord of the Theological Review, were trying to prove, against the accumulating testimony of Christian geologists in favor of long organic eras, that the earth must have been created in six working days, from morning to evening, in order to lay a foundation for the Jewish and Christian sabbath. At the same time, during all this warfare, the struggling science itself was variously denounced by such writers as a dark art, a forbidden province, an awful evasion of the testimony of Scripture, essentially infidel and atheistic; and scarcely yet have learned pulpits ceased to resound with the sarcastic invective of Cowper, against such as

> "drill and bore
> The solid earth, and from the strata there
> Extract a register by which we learn
> That He who made it, and revealed its date
> To Moses, was mistaken in its age."

Geology, it will be seen, is still in the thick of a battle, which infidels and apologists are waging for its possession, with manœuvres so swift and brilliant, that the lines of offence from science are scarcely formed before they become lines of defence for religion.

The Conflict in Anthropology.

From the rational side of anthropology already a combined attack seems aimed at the whole revealed doctrine of mankind. This complex science, with its roots in natural history and its branches in physiology, ethnology and archæology, could hardly fail to suggest infidel doubts to many minds; and there must, therefore, have been some wide foundation for the mediæval proverb, "Where there are three physicians, there are two atheists." It should also be remembered that medicine itself, as practiced by Arnold de Villa Nuova, was associated in the popular view with Mohammedanism as well as sorcery, and that martyrs of demonstrative anatomy, like Vesalius, had to encounter a vulgar prejudice and instinctive abhorrence quite as much as any mere theological hatred. And morever, the later anthropological sciences had not begun to trench upon the Mosaic doctrine of races. It could hardly have been mere zeal for scientific truth which prompted Bruno to term Adam the father of the Jewish people alone, when as yet ethnology was unknown; or La Peyrère to appeal from Genesis to pre-adamite tribes in America, before archæology was inquiring into their origin; or De Maillet, in an ironical sketch, to anticipate the transmutationists by depicting animals and men as amphibious products of the Deluge. It has been reserved for our times, and at the outset for American and English writers, to give such doubts a scientific air. Doctors Nott and Gliddon, in their "Types of Mankind," and again in their "Indigenous Races of the Earth," have scattered among valuable memoirs a variety of sceptical objections to the Mosaic doctrine of the human creation, which they term a crude and juvenile hypothesis. Professor Huxley, in his Reviews and Lay Sermons, speaks of the Hebrew Scriptures as the chief obstacle to Darwinism, and regards their view of the creation of man as belonging only to the infancy of science. Sir John Lubbock, though he never directly assails the Biblical anthropologists in his works on pre-historic man and the origin of civilization, has characterized Adam as a typical

savage, in his religion as well as in other respects, and denies the fall of the race from a primitive revelation. Charles Bray has issued a manual of anthropology, in which he collates the chief authorities of the science against the whole Scripture doctrine of man. And the latest German utterances of the school are still more extreme and outspoken. Professor Haeckel of Jena, in a memoir on the genealogy of the human race, maintains that second only to the geocentric error, which made the earth the pivot of the whole physical universe, is the anthropocentric error, which makes man the image of God and central object of the organic creation, and that the latter error has been destroyed by Lamarck, Goethe and Darwin, as was the former by Galileo, Kepler and Newton. Dr. Büchner of Darmstadt, in his "Man of the Past, Present and Future," simply traces the race from an animal, through a savage, into a civilized state, arraying all anthropological research, with sardonic coolness, against the Biblical doctrines of the creation, fall and redemption of mankind. Strauss, with Clarapède, has said, he would rather be a perfectionated ape than a degenerate Adam, as one might choose for an ancestor some rising citizen rather. than a mere dissolute Count. And Professor Carl Vogt, in his Lectures on Anthropology, as if to defy all religious prejudice, not only denies the special creation of man in the divine image, but, among other profane and indecent retorts of orthodox scorn, dares to classify certain crania of the simian type as Nazarene or Apostle skulls.

At the same time, from the revealed side of the science, the forces are mustering against the whole rational theory of the human race. And as yet, it would seem, with no very formidable array. The great discoveries of antiquarians, from Champollion to Lepsius, are to be opposed with the Biblical chronology of Archbishop Usher, as fixed by act of Parliament. The profound researches of linguists, from Humboldt to Whitney, are to be met with the pious tradition that Hebrew was the language of Paradise, preserved through the confusion of tongues at Babel. And as to the ethnological and physiological questions, there are signs of a recklessness worthy the darkest ages of the Church. As Virgilius, in the eighth century, was all but anathematized for his notion of an-

tipodes, on the ground that it would break the unity of the First Adam, so the guardians of orthodoxy in our day are denouncing Agassiz and Forbes for a theory of co-adamite races, which might really support their own doctrine of a high Adamic covenant, as distinguished from mere inherited sin. The charges of atheism and infidelity, which were hurled at devout naturalists in the middle ages, are now brought as indiscriminately against all Darwinians alike, lay and clerical, Mivart and Brown, Henslow and St. Clair, Peabody and Gray, in spite of their repeated protests. And the efforts of Roman cardinals in the fifteenth century, and French and English theologians in later times, to stir up popular odium against dissections as a desecration of the divine image, and against vaccination and chloroform as an impious evasion of the curse upon man and woman, may find some parallel in the invidious sneers of distinguished divines at the researches of comparative anatomists, though Calvin himself taught lessons of humility from the earthly origin and animal formation of Adam. Archbishop Sumner, in his Records of Creation, speaks of them as having taken an extraordinary pleasure in levelling the broad distinction between man and the brute creation. Dr. Jacobus, in his Notes on Genesis, would seem to concede to them no more valuable aim or attainment than the questionable satisfaction of finding their paternity in the ape. Dr. Delitzsch of Leipsic, in his Biblical Psychology, with a refined disdain which could only have been provoked by the coarseness of a Büchner or a Vogt, hints that they must first have essentially brutalized themselves before they could even entertain their peculiar theories of the animal origin of man.

Anthropology as yet is but a comparatively untrodden field, in which infidels and apologists are only beginning to reconnoitre and skirmish; and it is too soon to judge of their relative strength either for the promotion of true science, or the vindication of sound religion.

Entering next the psychical sciences, Psychology, Sociology, and Theology, where the human interests involved are so much more intense, we shall there find the two extremists, contending still more fiercely, on the field of each science,

from land to land, century after century, like long-embittered foes fighting their battles over again with only a change of tactics and weapons.

If in the physical sciences we have seen infidels but seldom beginning the offensive against their assailants, we shall now behold the warfare reversed, and apologists often put upon the defensive by the most terrible onsets; and whereas the conflict has hitherto mostly appeared in the regions of positive science, of ascertained facts and laws, it will hereafter be found very largely a war of opposing theories and notions, owing to the more imperfect state of the psychical sciences.

The Conflict in Psychology.

From the rational side of psychology there have been incessant attacks upon the revealed doctrine of the soul. Long before the close connections of this science with physiology had been explored, or any fixed mental laws were conjectured, sceptical doubts were broached as to man's immortality and responsibility. The Italian infidels made their attack covertly under a revived Aristotelianism. Pomponatius, the master of the school, taught with the Stagyrite, in a work misnamed the "Immortality of the Soul," that the mind is inseparable from the body and perishable with it, and disingenuously cited Homer, Pliny and Seneca, as examples of virtue without the motives of a future life, whilst himself accepting the grossest practical consequences of his theory. Achillini and Nipho, though adversaries of Pomponatius, would simply have dissolved the individual soul in the general soul of the world. Jerome Cardan, according to Warburton, justified these opinions on the ground of state-policy, arguing that the belief in a vague immortality only destroys the present influence of the good, and gives license to the bad. Cremoninus, who wrote upon the senses and the appetites, expressed the growing depravity of the school in the atrocious maxim that vice itself was a privilege of the clergy. And even Pope Leo X. and Cardinal Bembo, are suspected of having hypocritically issued a bull against these heresies, as a mere idle fulmination to blind the populace.

The English infidels made their attack more openly and powerfully with the empiricism of Bacon and Locke. Thomas Hobbes of Malmesbury, the founder of the school, in his various writings on "Human Nature" and "Necessity and Chance," merged the mind in the body as affected and impressed by other bodies through the brain; subjected the will to physical compulsion, and reduced conscience itself to a mere balancing of sensuous pain and pleasure. Dr. William Coward, whose work entitled "Second Thoughts concerning the Human Soul," was ordered to be burned by the common hangman, argued that the traditional notion of an immaterial, immortal spirit united to the body, was a plain heathenish invention and philosophic imposture, as all thought results from mere matter and motion. Anthony Collins, the champion of the free thinkers, not only defended the natural mortality of the soul, but in his "Philosophical Inquiry concerning Human Liberty and Necessity," undermined all moral responsibility, by enchaining the will in mere physical causation. Shaftesbury and Bolingbroke, making ridicule their test of truth, politely sneered at the Christian graces of humility, penitence and meekness, as essentially mean and degrading; while Thomas Chubb coarsely scoffed at future moral awards as no more likely than a Divine judgment of the animals. Bernard Mandeville, a French physician in London, as if to throw off all disguises, in his "Fable of the Bees or Knaves turned Honest," boldly reversed the distinction between right and wrong, by defending the atrocious paradox that private vices are public benefits. And at length this desolating tide of scepticism came to the flood in David Hume, whose essays on the passions, on immortality, and on suicide, reduced man to a mere irresponsible animal, denied all future judgment as impossible and absurd, and held the life of a man at no higher price than that of an oyster.

But the French infidels of the last century even more recklessly overran all morality, as well as spirituality, with the sensualism of Condillac. Claude Helvetius, a literary protégé of Voltaire and the chief propagandist of the school, in his famous treatise on "The Spirit," maintained that the soul is but organized matter, pleasure the chief good, and virtue

and vice due to mere animal sensibility as modified by climate. Julius de la Mettrie, whose "Man the Machine," and "Man the Plant," were publicly burned as offensive to good morals, described the mind as but a piece of perishable mechanism, and deduced without reserve the vilest inferences of the theory in a treatise on the School of Pleasure, or Art of Enjoyment. And at length Baron D'Holbach and his confrères, in their "System of Nature," reduced this mass of sensuality and fatalism to a compend, which Voltaire himself, in a lucid moment, declared to be simply detestable.

And yet the German infidels of our day would seem to have plunged into a still lower and grosser materialism from the idealism of Hegel. Louis Feuerbach, as fiery by nature as by name, well styled the modern Porphyry, taking the brain as the highest product and organ of the absolute reason in the Hegelian dialectic, has sought to identify thought with its phosphorous substance, and gravely argued that we are what we eat; that the future progress of science depends upon a more phosphoric diet than potatoes; and that at death the so-called soul goes down into the dust to become the fresh fuel of life. Carl Vogt, in his "Types of Animal Life," recalling a bold figure of Cabanis, still more grossly describes thought as a mere secretion of the brain, like that of the liver or the kidney; asserts that we have no more power over our intellectual faculties than over such bodily organs; and recklessly denies that there is any such thing as free-will, moral accountability, or any future rewards and punishments. J. Moleschott, in his "Circulation of Life," descends from the stye to the charnel-house, declaring not merely that mind is a mere movement of matter and function of the brain, but that the only immortality is that of the disintegrated body, whose ammonia, carbonic acid and lime have served to enrich the earth, and nourish plants and animals, to feed the brains of other generations of men. And Büchner, in his treatise on "Matter and Force," as if to find a lower depth, after tracing man from the dust to the animal and back to dust, consistently hints that a dying philosopher of the right temper might rather be devoured by crows than have Christian burial.

From the revealed side of the science, meanwhile, there have

been constant recoils against the rational theory of the body. As Plato and Aristotle, by turns, had been anathematized in the Church, so Descartes, with his proffered proofs of immortality, was censured by the Sorbonne and the Synod of Dort; while Locke, with his notion of cogitative matter as a germ of the resurrection, was repudiated by the Cambridge divines. If the infamous works of La Mettrie and D'Holbach were justly condemned to the flames, yet their germinal principles had already been broached by Fathers Gassendi and Condillac, as well as by Hartley and Bonnet, who even sought to combine them with the Christian faith. And at the same time, the defensive weapons which were forged in the Church against the new psychologic theories, often proved less destructive in their attack than in their rebound. The Italian apologists hastily armed themselves with a renewed Platonism. Marsilius Ficinus, chief of the school at Florence, in a treatise on the Platonic Immortality and Eternal Felicity of Souls, held the mind to be a divine energy, or spiritual emanation imprisoned in the body, from which it was to be liberated and resolved into deity by an ascetic life. The two Picos of Mirandola, uncle and nephew, mingled cabalistic or Jewish traditions with the new Platonism, and carried their spiritualistic principles into practice to the extreme of enthusiastic self-sacrifice. And later followers of the school in other countries, such as Paracelsus, Von Helmont, and Fludd, were at length landed in extravagancies akin to modern clairvoyance, animal magnetism and spiritism.

The English apologists more vigorously reinforced the spiritualism of Plato. Ralph Cudworth, the leader of the Cambridge Platonists and chief antagonist of Hobbes, in his "Intellectual System," defined the soul as a plastic mind or intelligent force, moulding and sustaining even the body itself; and afterwards maintained its absolute independence and liberty, in a treatise on Free-will. Henry More, so fastidious an intellectual epicure that he is said to have been ashamed of having a body, not only discoursed apologetically on immortality and free-will, but in a "Platonic Song of the Soul," depicted the future disembodied spirit, indissoluble and yet diffused, luminous and endowed with plastic and percipient powers:

"Like naked lamp, she is one shining sphere,
And round about has perfect cognoscence,
Whate'er in her horizon doth appear.
She is one orb of sense, all eye, all airy ear."

John Smith, another disciple of the same school, added to this picture of the immortal soul that of her future spiritual body, as no mere gross complex of bones and flesh, but her aerial mantle and vehicle. Dr. Samuel Clarke, the redoubtable adversary of Collins and Coward, in order to refute their notion of the natural mortality of the soul, metaphysically distinguished it from the body as an indivisible substance, endowed with an indivisible consciousness, and therefore indissoluble by death. At length Bishop Berkeley, recoiling by his own ponderous blows to the opposite extreme from Hobbes, in his "Dialogue between Hylas and Philonous," (a materialist and spiritualist),went so far as to question the materiality of the whole external world, leaving nothing in the universe but spirits impressing each other with ideas. And other like-minded apologists, such as Norris and Collier, were driven beyond this extreme into a paradoxical denial of the externality as well as materiality of all sensible existence.

The French apologists took refuge in the dualism of Descartes. Blaise Pascal, whose satirical "Letters" have made the very name of Jesuit synonymous with loose ethics, adopting into his theology the Cartesian distinction between matter and spirit as two separate inscrutable essences, consistently depicted the immortal soul as a fallen Lucifer, chained to a body of death. Arnold Geulinx of Louvain, the Calvinistic Expounder of Descartes, in his "Annotations," correlated soul and body as two mere passive instruments of Deity, co-acting in thought and sensation, and inferentially resolved the very dictates of virtue into divine decrees. Anthony Arnaud, the great Catholic expounder of the school, in a treatise upon ideas, referred them to the mind as distinguished from matter; derived them from a sort of occult suggestion of God; and based all our knowledge on the divine veracity alone. At length Father Malebranche, the austere monk of the Oratory, who scorned alike the learned and the great, in his

"Search for Truth," degraded the body into a mere animal machine; sublimed the soul into a pure spirit beholding all things in God, their only revealer as well as creator; and disdained even the sensible evidence of an external world, except as confirmed by the Holy Scriptures and the Catholic Church. From such extravagant spiritualism, it was not strange that afterwards there should have come that rebound to the materialism of the Encyclopædia, which the efforts of Bergier, Ploucquet and Lussac could not arrest.

The German apologists meanwhile were entrenching themselves in the monadism of Leibnitz. Christian Wolf, the organizer of the school, assuming the Leibnitzian definition of the soul as a spiritual monad or conscious force, was endeavoring by purely metaphysical proofs to demonstrate the dogmas of its immateriality, accountability and futurity; but since Kant and his idealistic disciples, by their rational criticism, have exposed both the dogmas and the proofs to fresh suspicion and overthrow, it has only remained to repair the fortress from the old arsenals, or defend it with new armaments. Dr. Francis Hettinger, Roman Catholic professor at Marburg, in his Apology for Christianity, has revived the sensitive, vegetative and rational soul of St. Aquinas as substantially expressed in the body, in opposition to the chief scientific authorities of recent materialism. Dr. Luthardt of Leipsic, in his popular Apologetical Lectures, also meets the assaults of Feuerbach, Vogt, and Büchner, with the traditional conception of the soul as a mental, moral and religious principle, involved in the bodily organism, yet essentially independent and superior, as consciousness testifies. Professor Hermann Ulrici, in his masterly treatise on "God and Man," against the psychological materialists, defines the soul as a psychic force blending with the plastic force of the body, and pervading its atomic structure like an atomless fluid, yet with a consciousness ever distinguishing it from the body, from other embodied souls, and from the Divine Spirit. Professor Rudolf Wagner, the distinguished physicist, has charged the current materialism with a non-scientific character and immoral tendency; and having remarked in a convention of naturalists, that he preferred the faith of a collier to the speculation of a

scientist, was assailed by Carl Vogt with a satirical pamphlet entitled, "Collier's Faith and Science," to which he gave the rejoinder, "Knowledge and Faith," maintaining therein the substantiality of the soul as a sort of ether in the brain, which after death may acquire locomotive power as swift as the light of the sun, together with a capacity for localization, and perhaps even re-incarnation upon earth. Other apologists, by renovating the atomism of Leibnitz, are striving to resolve the body itself into a mere congeries of spiritual forces, or phenomenal manifestation of the soul; while some in their zeal to keep soul and body distinct, are relapsing toward the mechanical dualism of Descartes.

And now, as an antithesis to the wildest materialism on the infidel side, we have the American school of so-called spiritualists, or spiritists, led by the Poughkeepsie seer, Andrew Jackson Davis, and Judge Edwards, who claim to bring new sensible evidence of immortality and the whole unseen world, by means of telegraphic communications with apostles, saints, heroes and deceased friends, together with materializations of spirit, levitations of matter, and other such phenomena, surpassing the wildest necromancy of the middle ages.

The conflict in psychology, after having been waged for centuries, has at length come to close quarters, and infidels and apologists are fighting hand to hand, as if for the very truth of science and life of religion.

The Conflict in Sociology.

From the rational side of sociology, likewise, have come frequent assaults upon the revealed doctrine of the Church or spiritual organization of society. When this intricate science was unknown and while as yet its various departments, politics, political economy, history of civilization, philosophy of history, were treated as regions of mere human caprice rather than of natural law, there were reckless thinkers seeking to impugn all ethical principles, divine institutions and supernatural Providence. The Italian assault was opened on the field of statesmanship. Nicholas Machiavelli, of whom Bacon, his most charitable critic, has said, that he analyzed the impious and

cruel acts of despots as coolly as a chemist treats of poisons, published a work styled "The Prince," which exhibited Cæsar Borgia as a model, and became the catechism of absolute monarchs; while, in his History of Livy, he broached fatalistic views of social development, and based his ideal state on Pagan rather than Christian Rome. Gabriel Naudè, a French infidel, tolerated at the papal court, is said by Hallam to have taken from Machiavelli the political considerations on state policy with which he sought to justify the massacre of St. Bartholomew. And Campanella, with still more paradoxical boldness, in one of his treatises proposed to the Spanish monarch a universal war for the triumph of the Papacy over Protestant and Pagan nations, and yet in another treatise anticipated the most visionary socialists of our time, with opinions wholly subversive of property, the family, and the state.

The English infidel assault was extended to the wider fields of political science and general history. Thomas Hobbes, who translated Thucydides whilst an exile from the Commonwealth, in hopes of disgusting his countrymen with the evils of democracy, in his treatise well-named "Leviathan," represented the body politic as a huge material corporation without souls and without a spiritual God, the state as mere organized might trampling upon right, the church as but a creature of the state, and society as ever at the alternative of despotism or anarchy. Edward Gibbon, by Byron styled "lord of irony, sapping a solemn creed with solemn sneer," professed to waive the pleasing task of describing Christianity as she descended from heaven that he might depict the inevitable mixture of error and corruption which she contracted during a long residence upon earth; and in his "Decline and Fall of the Roman Empire," lavished the most classical English in the language upon the most awful spectacle in history, only to ignore her claims and disparage her charms. And later English writers, such as Godwin, Owen, and Buckle, have made their still more direct attacks upon political order and divine Providence.

The French infidel assault spread through civil history into political economy and social science. Montesquieu, who re-

flected the skepticism of his time in his "Persian Letters," and his speculations upon the "Grandeur and Decadence of the Romans," in his later more celebrated treatise on the "Spirit of Laws," dwelt so impressively on the influence of climate and other physical agencies upon civil institutions, and ignored so entirely divine Providence in human affairs, that the Theological Faculty required him to modify subsequent editions of the work. Volney, whose Catechism of a French Citizen is but the condensed ethics of atheistic materialism, in his "Ruins of Empires" wholly obliterated the supernatural character of Christianity, and rendered all history but a spectacle of hopeless confusion and error. Jean Jacques Rousseau, as eccentric in his politics as he was in his religion, recoiled with sentimental misanthropy from the vices of civilization to an original state of nature or social contract, in which he dreamed of society as re-organized on a basis of savagery and impiety. The Marquis of Condorcet sketched a picture of human progress from barbarism to an imaginary social perfection as effected by mere physical education without Providence and without morality. And at length Auguste Comte, came forward with his "Political Catechism," gravely proposing to re-organize society as a sort of atheistic scientific hierarchy, literally without a king and without a God.

But the great German infidel assault of our day has at last stormed the speculative heights of philosophical history. After Lessing had belittled the whole supernatural element in the divine education of the human race, and Hegel and Schelling had involved universal history in their supposed development of absolute reason, it has been easy for their extreme disciples to deduce the most irreligious views of social progress. Strauss, in his celebrated Life of Christ and the two Bauers, in their histories of doctrine, applying the Hegelian dialectic, have sought to resolve ancient Christianity into a mere philosophical mythology, the successive dogmas of the Church into dry logical formulas, and all accompanying civilization into the scaffolding and refuse of the absolute philosophy. At the same time, the more radical socialists, as led by Arnold Ruge and Schweizer, have been

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boldly assailing all fixed institutions, and maintaining that Christianity itself is opposed to the spirit of the age, that theologians are a vanishing race, the Church doomed to become extinct, and the State of the future to do without a religion; while the recent pessimists, Hartmann and Bahnsen, are arguing against all divine purpose in history as well as nature, and exhibiting humanity as but the crowning abortion of the world.

And at length the American infidel assault, still more practical in its aim, has been seeking to undermine the very foundations of social order; not merely by excluding the Church from the State, and Christianity from politics, but by the new socialistic views of the Owens, the emigrant followers of Proudhon, and other European refugees, who would abolish both church and state, property and family, and all divine institutions, in order to reconstruct society upon wholy irreligious principles.

But from the revealed side of the science have followed as frequent recoils against the rational theory of the State, or temporal organization of society. Not only were the doctrines of political reformers concerning civil liberty, from Arnold of Brescia to Cromwell, stigmatized as impious and rebellious; not only were the teachings of political economists respecting interest and capital, from Montesquieu to Bentham, rejected as contrary to the Scriptural rule of usury and the curse of labor; not only were the harmless utopias of socialists, from More to St. Simon, repudiated as caricatures of the Christian community of goods; and not only were the inquiries of philosophic historians for the fixed laws of human progress, from Vico to Draper, denounced as incompatible with Divine Providence and sacred history; but the alternative systems in which great apologetic churchmen entrenched themselves, often proved untenable or were left dismantled in the course of the warfare. The Italian defence was taken on the high ground of a pure theocracy. Cardinal Bellarmin, the great champion of the papacy, who is said to have held the best polemical pen in Europe, in his famous Disputations, described the Church as a vast spiritual corporation, endowed with divine prerogatives, the State as but a vassal of the

Church, and the head of the Church as the vicar of Christ upon earth, entitled to a universal monarchy, both spiritual and temporal, over all earthly kingdoms and nations. And consistent to this hour, the Roman Church still stands protesting against all surrounding civilization as heretical and impious, though her infallible Pope is little more than a state-prisoner in the Vatican. The French defence was taken on the similar ground of a theocratic monarchy. Bossuet, the shield of the Gallican Liberties, not only maintained the divine right of kings as well as popes, with scriptural arguments, but in his celebrated Discourse on Universal History, exhibited to the Dauphin of France all ancient civilizations as successively made tributary to the Catholic religion by a Providence which marched with strides of fate, through falling empires, over the prostrate wills of men. And other apologists of the reactionary school, such as Chateaubriand, De Bonald and De Maistre, have continued to present the same polity as the only bulwark against the evils of modern culture, as they are expressed in the French revolution.

The English defence was taken on the grounds of episcopacy, presbytery and congregationalism. Archbishop Laud, the stern propagandist of prelacy, who blended the divine right of bishops with that of kings, would have reduced the State to a mere supple instrument of the Church; and from the secret star-chamber in which he ruled embarked in that ecclesiological experiment upon Scottish society, which was to yield the model of a theocratic episcopacy. Alexander Henderson, the author of the Solemn League and Covenant, led his countrymen into that still wilder crusade by which king, lords and commons were to be compacted in uniformity of doctrine and worship under the divine right of presbytery. Sir Henry Vane, returning from the colony of Massachusetts to the commonwealth of England, then published his "Face of the Times," in which he traced the conflict between the seed of the serpent and the seed of the woman, through the rise and fall of four great monarchies, to an approaching Fifth Monarchy, to be established by the second coming of King Jesus, with a community of goods and a reign of saints. And since then, as counterparts of Gibbon and Hume, we have had a

line of apologetic historians, from the learned Prideaux, who strove to exhibit all Gentile civilization as but a course of vindictive Providence on behalf of Christianity, to the recent Theocratic History of Schomberg, who has looked for similar divine interpositions in the annals of English episcopacy; while millenarians, like Cumming, are interpreting current political events as signs of a Messianic kingdom about to befall, with a universal social catastrophe.

The German defence has been taken where the attack could alone be repelled, on the heights of speculative history. In that lofty fortress of the faith, chief among other apologists stood Neander and Ebrard, with their biographies of Christ, and Dorner and Meyer, with their histories of doctrine, defending against Strauss and Baur the supernatural origin and development of Christianity in its distinction from the accompanying civilization, like a beleaguered garrison beset by treason within and foes without, while their allies at a distance were but mocking at the battle as a false alarm, until the same undermining hosts began to spring up beneath their own feet. At the same time, in the region of ecclesiastical history and speculation, the Catholic Leo has been projecting the mediæval theocracy as the Church of the future, while the Protestant Rothe would realize the primitive polity in some ideal Christian republic.

And now, in contrast with these old-world movements, as if to match the most extravagant socialism on the infidel side, we find in American society the wildest experiments in Christian polity; not merely the rank reproduction of all European churches and sects in a fresh struggle for the mastery, but new monster growths of our own soil, such as the hybrid church-state of Mormon, and the theocratic dreams of Millenarians, ever and anon predicting some miraculous re-organization of the world's political system by the return and reign of Christ.

The conflict in sociology, owing to the new and confused state of the science, is less like a battle than a vast ambuscade, where neither infidels nor apologists as yet could meet and range themselves under the banners of science and religion.

The Conflict in Theology.

From the rational side of theology, also, there have been perpetual attacks upon all revealed religion. With the rise of natural theology in the physical and mental sciences, and the growth of the comparative study of religions, have come successive infidel efforts to discredit or disparage the peculiar evidences, doctrines and duties of Christianity. The first form of the attack was that of Italian naturalism. At the dawn of the movement, the great poets, Dante, Petrarch and Boccaccio, more or less consciously, had already leavened Christian literature with pagan elements. Pomponatius, with disguised unbelief, as the chief of the school, in a treatise on the causes of natural phenomena, held with Aristotle, that God, the prime mover, is wholly abstracted from the world in eternal self-contemplation, while the mundane intelligence itself and all other spirits are but physical and mortal. Simon Porta, an advanced disciple of the same school, reduced its doctrines to system in his natural philosophy. Bruno, combining the atomism of Lucretius with the new, more scientific conceptions of nature, represented the universe as an infinite and eternal substance, which he called God, undergoing perpetual metamorphoses in all worlds, through all stages, from lifeless atoms to living orbs. And Julius Vanini, a still more reckless thinker, by the publication of a work entitled "Nature, the Queen and Goddess of Mortals," seems to have torn the mask from the prevalent naturalism, and revealed it as pantheism or atheism.

The next form of the attack which followed was that of English deism. Herbert of Cherbury, as the forerunner of the school, by distinguishing truth from revelation, led the way, with his project of a religion of all nations, comprising only as much of Christianity as it has in common with natural theism. Hobbes, the chief founder of the school, in his Leviathan, admitted the probable existence of God, but only as an incomprehensible material cause of the world, whose blind omnipotence was lodged in the king as head of a body politic, including even the state-religion under the royal prerogative. Bolingbroke, the courtier of the school, advanced a somewhat

more refined conception of God as a physical Creator of the world, displaying in his works the mere natural attributes of power and wisdom; but denied that any moral attributes could be discerned either in nature or in Providence, both of which often appear to contradict true goodness and justice by instances of malevolent contrivance and unpunished vice. Alexander Pope, as the poet of the school, depicted in lines which have the fascination of horror, a stoical Deity,

> "Who sees with equal eye as Lord of all,
> A hero perish or a sparrow fall,
> Atoms or systems into ruin hurl'd,
> Or now a bubble burst, or now a world."

Thomas Chubb, a literary tallow-chandler, with much natural shrewdness, popularized the genteel deism by a series of pamphlets, in which, after the manner of Paine, he attacked the Scriptural representations of Providence as wholly inconsistent with natural ethics. And at length David Hume, in his Dialogues on Natural Religion, accumulated all the sceptical objections that had ever been raised against the existence of a God; denied that we can even conceive such a being, or, indeed, any adequate cause of the world; and declared that the best conception we can form of the universe is that of a huge, growing plant, rather than a work of intelligent design.

The next phase of the attack was that of French atheism. Montaigne and Le Vayer had already raised the spirit of scepticism. Voltaire, the wit and idol of the school, though a professed deist, in his sketch of the Ignorant Philosopher, threw doubts upon the whole argument for a God, admitting it only as good for police; scoffed at Providence under the mock titles of Chance and Destiny; and wrote one of his romances, entitled "Candide," as a satire upon the doctrine of the religious trials of life. Diderot, the popular leader of the school, a sophist and a profligate, who fled from Paris to the protection of Catherine of Russia, in his Philosophical Fragments, openly assailed the belief in a just God as an unnecessary and troublesome tenet, interfering with the pleasures of life. Julius la Mettrie, court philosopher to Frederick the Great, promulged, in his treatise on the Happy Life, the im-

pious creed that men would never be happy until they became atheistic and abandoned the dictates of religion for the appetites of nature. The authors of the "System of Nature" openly avowed the atheism of the school; maintained that though a God might be respected, yet the world alone was to be loved; and argued that more education and courage were all that was needed to make this creed universal. Anacharsis Clootz proclaimed, in the Revolutionary Convention, that there was no other God but Nature, and no other sovereign than the divine people. And at length, after this atheism had been repeated with endless variations, Auguste Comte announced a new so-called religion, having man himself for its only God, and consisting essentially in the systematic worship of humanity.

The final form of attack in our day has been that of German pantheism. Lessing and Jacobi had already revived and imported the speculations of Spinoza upon absolute Deity, and the extreme disciples of Schelling and Hegel, in due time, were couching them under Scripture phrases in place of the Christian theism. Bernard Blasche, of the former school, sought to resolve man into a mere phenomenon or transient image of God, and to make the evil as divine as the good in the government of the world. Carl Michelet, as a strict Hegelian, with his doctrine of absolute personality, would virtually have merged God in the world as having no separate independent existence and coming to consciousness only in man, the true incarnate Christ. Strauss, at the extreme left of Hegel, passed into still grosser pantheism, in his "Old and New Faith," by substituting for the Christian God, as his only object of worship, a law-governed cosmos, or enormous machine of a universe, amid whose jagged wheels and ponderous hammers helpless man may at any moment be seized and crushed to powder. Feuerbach, from the same position, reached a sort of conscious anthropomorphism, maintaining, in his "Essence of Christianity," that man, as the final product of the whole logical development of nature, can find no superior being; that the imagined deity is only an illusory personification of his own human attributes; in a word, that he has but created a god after his own image. Arthur Schop-

enhauer, with still more daring impiety, in his work entitled "The World as Will and Notion," boasted that he had destroyed the last vestige of theism, by showing that both the cosmos and its man-made deity are alike ideal and illusory, the mere phantasm of his brain, an abortive human creation, which by one stroke of the will would collapse into blind force and nothingness. And Ernst von Hartmann, a disciple of both Hegel and Schopenhauer, as if to couple absurdity with impiety, believes himself to have demonstrated atheism or pantheism by uniting unconscious force and reason throughout nature and history, while in his recent tractate on the "Decomposition of Christianity" he projects a sort of philosophical Buddhism as the universal religion of the future. At the same time, these different forms of European unbelief have now and then found American representatives, from Paine to Theodore Parker, together with other indigenous allies, such as the Free Religionists of Boston, who would demolish all existing creeds in order to rebuild some new religion on antichristian principles.

From the revealed side of the science, however, there have ensued occasional recoils against all rational religion. If it can be said that the disciples of natural theology and the followers of heathen religions have always been treated with due tolerance and pity, or that their own irreverence and folly have not often justified a harsh usage, yet it must also be granted that in the criticism of their systems many valuable grains of truth have been thrown away with the chaff of error, and that not seldom have the resorts of the defenders of Christian theology been found weak or absurd. Some of the Italian apologists were thus betrayed into an extravagant supernaturalism. Ficinus and the two Picos, in opposing with Platonic arguments the Aristotelian doctrine of a mundane soul, maintained the direct intervention in the natural world not only of God but of spirits and angels, and thus opened the way for those superstitions of sacred magic and theosophy which soon overspread Europe.

Some of the English apologists, also, venturing upon the grounds of deism, were caught in serious errors. Cudworth, whose "Intellectual System of the Universe" remains a

prodigy of classical erudition and metaphysical acuteness, by reviving the ancient doctrine of a plastic nature or organizing soul distinct from God, avoided the fatalism of Hobbes only to become entangled in the scepticism of Bayle, who adroitly charged him with the very atheism he aimed to refute. Clarke, in his celebrated "Demonstration of the Being and Attributes of God," professed to frame a strictly logical conception of absolute deity, as a necessary substratum of infinite space and time, but by making human thought the measure of the divine nature, as well as by deriving from the world itself his proof of the divine character, he exposed himself to the sophistry of Bolingbroke, as expressed in the sarcasm of Pope against those

> "Who nobly take the high priori road
> And reason downwards till they doubt of God."

A number of apologists, such as Leland, seem to have consciously labored under social and literary disadvantages in criticising titled authors, like the Earl of Shaftesbury and Viscount Bolingbroke. Bishop Warburton's paradoxical defense of the Divine Legation of Moses on the ground that unlike heathen legislators he maintained a civil polity without the motives of future rewards and punishments, must have seemed to his astute opponents like the exploit of the dog in the fable, who sacrificed the substance for the shadow. And Bishop Berkley, though his Principles of Human Knowledge are oftener ridiculed than refuted, can scarcely be said to have established Christian theism by assuming it as the basis of a metaphysical theory of the world, which Hume declared to have afforded more sceptical lessons than all ancient and modern systems combined.

Some of the French apologists, too, in their recoil from atheism ran into errors not less serious. Pascal, though he projected in his "Thoughts on Religion" a magnificent Christian apology, which is still admired as the torso of a master, might only have supported the orthodoxy of Augustine with the scepticism of Montaigne. Father Malebranche, whose theory of the vision of all things in God was tersely endorsed by Bossuet, *pulchra, nova, falsa*, seems to

have pursued his antagonist, Spinoza, along the dizzy verge of pantheism, until he became himself all but fascinated by the abyss from which he recoiled. And Fenelon, whilst discoursing with saintly eloquence upon a Deity conceived as the Being of all beings, the most Essential of all essences, may have only been neglecting plainer physical proofs which were destined to pass through the hands of Maupertuis, Bonnet, and Rousseau, until at length the Cardinal Polignac should find himself vainly confronting the "System of Nature," with his "Anti-Lucretius."

But some of the German apologists have recently been landed in still more deceptive errors. Since the time when Kant by his subtle criticism had undermined the theistic arguments of Leibnitz, Wolf, and their disciples, a host of defensive divines have been rushing into the breach armed with old and new weapons. The veteran theologians, Storr and Flatt, Knapp, Hengstenberg, and Tholuck, have simply striven to repel the new pantheism with the spontaneous evidence of reason, of conscience, and of Scripture. The Catholic Hettinger, in opposition to its chief authorities, has collated the testimonies of schoolmen, and doctors, and the decrees of councils. The Hegelian dogmatists, Marheineke, Daub, and Göschel, have been transfusing divine realities into its godless abstractions, and even looking for the Christian trinity in its trilogy of the universal logic. Other speculative divines have recoiled from it towards the crude Cartesian dualism, or the pre-established harmony of Leibnitz. At the same time, apologetic students of Comparative Theology, like the Platonizing fathers, are connecting the Christian religion as a supernatural and special revelation with one that is natural and universal in all other religions. And at length, as a fit counterpart for the wildest irreligion of infidel fancy, we have in our American medley of creeds, besides the new scriptures and apostles of Swedenborg and Irving, the modern Christianism of Campbell, and Judaism of Mormon.

In the great conflict which we have been sketching, Theology as the science of religion stands among the other sciences, like a citadel in the midst of concentric bulwarks, beleagured from outpost to battlement, but ever lifting a divine signal toward heaven.

At this point it would be in order to trace the same warfare in metaphysical science or rational cosmology, as waged by infidel pessimists from Voltaire to Schopenhauer and apologetic optimists from Leibnitz to Weygoldt; but the notice of these and other omitted opinions and authors must be reserved for the following lectures.

The Conflict in Philosophy.

Ascending at length into the high region of philosophy, the science of the sciences, we shall there find the conflict on the largest scale between the two great factions of infidel sceptics and apologetic mystics, who have contended, during successive centuries, in different countries, concerning the limits or prerogatives of reason and revelation, like rival emperors whose numerous skirmishes and battles at last merge in a general encounter for the prize of universal dominion.

At the rationalistic extreme of philosophy there has been a growing effort to supplant divine revelation by means of human reason. In the sixteenth century this effort was disguised and restricted. Italy, as we have seen, had the school of Pomponatius, whose treatise on Fate and Free Will was the first of the mock compromises between truths of reason and truths of revelation. France had but an occasional sceptic, such as Pierre Charron, a wayward disciple of Montaigne, who argued, in his work on "Wisdom," that revelation is metaphysically impossible, and reason, defective though it be, the only guide of life. And the rest of Europe was scarce disturbed with a doubt. In the seventeenth century the scene rather than the spirit of the movement was changed. Italy, for the time, disappeared from the philosophical arena. France was represented by Le Vayer, whose "Dialogues" united the scepticism of Charron with the epicurism of Gassendi, in a covert attack upon all revealed religion. And England was led into the coming conflict by Hobbes, who treated revelation as a mere historical tradition, to be woven into his system of political idolatry. In the eighteenth century the movement became more open and general. England now appeared in the front, under such leaders as Anthony Collins,

whose "Essay on Free Thinking" first asserted the independence of reason, whilst his "Grounds of the Christian Religion" undermined the prophetical evidence of revelation; Woolston, whose "Discourses" assailed the miraculous evidence as of a purely mythical nature; and Morgan, whose "Moral Philosopher" made reason the sole judge of the contents as well as evidences of revelation, rejecting Christianity as mere sublimated Judaism. France soon followed with such master spirits as Voltaire and Rousseau in the world of letters, D'Alembert and Diderot in the world of science, and D'Holbach and Helvetius in the world of fashion, all combining to array reason against revelation, with a versatile genius as dazzling as the hues of the serpent in paradise. Germany, too, at the infidel court of Frederick and in the "Wolfenbüttel Fragments" of Reimarus, began to muster for the formidable critical attack of the next century. And Europe generally was asserting the independence of reason against revelation; whilst America first emerged to view in the "Age of Reason," by the notorious Tom Paine. And now, in this nineteenth century, we behold the movement everywhere becoming intense and systematic. France has condensed all her materialistic infidelity in Auguste Comte, whose "Positive Philosophy" aims to substitute physical science by the very law of its growth, in place of revelation. Germany has massed all her erudite, metaphysical infidelity, in David Strauss, whose "Life of Christ" is an astute attempt to resolve the gospels into mere ancient myths and philosophic fables, in the light of modern thought and research. England has reproduced all her varied practical infidelity in Francis Newman, whose "Phases of Faith" exhibit the transition of Christianity, from Calvinism to Deism, under a supposed law of progress, toward a perfect religion. And America would seem to have combined English, French and German infidelity in Theodore Parker, whose "Discourses of Religion" represent the Christian revelation as only the last of the world's mythologies, to be surmounted by the one absolute faith of reason.

At the mystical extreme of philosophy there has been a corresponding effort meanwhile to supplant human reason by

means of divine revelation. In the sixteenth century this effort was complete and successful. Italy, as we have seen, had the Platonic school of the two Picos, whose works on the "Hexaplus" or six days' creation, and the "Study of Divine and Human Wisdom," virtually superseded reason, by deriving from revelation all science, both physical and metaphysical, heathen and Christian. Germany had the affiliated schools of Reuchlin, whose "Wonderful Word" offered the Holy Scriptures as the only cure of monkish ignorance, and the key to all knowledge, divine and human; Agrippa, whose "Occult Philosophy" proposed divine revelation as the sole remedy for the uncertainty and vanity of human science; and Valentine Weigel, whose "Golden Touchstone, or Way to learn Infallibly All Things," afterward gave rise to the extravagant pretensions of the Rosicrucians, or secret fraternity of the Rosy Cross. England, at the same time, had the forerunner of a like movement in Robert Fludd, whose "Mosaic Philosophy" professed to found a purely Christian science of creation on the book of Genesis. And Europe at large was only beginning to waken from the trance of scholastic mysticism. In the seventeenth century, with the increase of free thought, the effort grew more conscious and avowed. Italy was then under the heel of the Roman hierarchy, claiming to suppress reason by an infallible revelation, as expressed in the decrees of the Council of Trent. Germany still retained her school of mystic naturalists and divines, such as the Von Helmonts, father and son, whose "Holy Art" was designed to substitute revelation and inspiration for reason and observation in all fields of research; Jacob Bœhme, the Teutonic Philosopher, who sought, by his "Aurora," to shed the light of Scripture through every province of nature; and John Comenius, who professed to derive from the Mosaic writings a "Synopsis of Physics, reformed according to Divine Light." France had a convert to the same school, in Pierre Poiret, who assailed Descartes and Locke as mere rationalists; distinguishing, in his "Three Kinds of Learning," all human science from the Divine wisdom, as in its very nature false or superficial. Sweden, Norway and Switzerland had like representatives in such biblical philosophers as Casman, whose

"Modest Assertion of True and Christian Philosophy" embraced a whole encyclopædia of science, derived exclusively from the Scriptures; Aslach, who drew from the same source, "A System of Christian Ethics and Physics"; and Danæus of Geneva, who wrote a similar treatise on "Christian Physics." England, at the same time, rallied against her deistical rationalists, the Cambridge school of Platonic divines, such as Theophilus Gale, the learned Presbyterian non-conformist, whose "Court of the Gentiles" was designed to include all human philosophy within the pale of divine revelation, by heathen tradition from the Holy Scriptures and the Jewish Church; Henry More, the ascetic mystic, of whom we have before spoken, whose "Cabalistic Conjectures" proceeded upon the same theory, only to a greater extreme; and the naturalists, Hutchinson, Burnet and Whiston, who endeavored to extract whole systems of physical science from the books of Moses. And Europe generally was marshalled for the great impending conflict. In the eighteenth century, with a change of ground and weapons, the effort became defensive and desperate. Italy still claimed the whole province of philosophy for the chair of St. Peter. England, forced to concede to reason her rights as critic of the evidences of revelation, produced only such judicious apologies as those of Butler, Warburton and Paley. France, overwhelmed with revolutionary infidelity, presented no longer any front of aggressive Christianity. Germany was idly striving to make terms with the rationalism which spread stealthily through her seats of culture. And all Christendom was a theatre of conflicting opinions. And now, in this nineteenth century, the effort would seem to have wholly ceased or become purely apologetic. Protestantism, rallying round an infallible Bible, has left the open field to reason, whilst Catholicism alone pretends to repress and confine it through her recent syllabus of an infallible Pope.

And thus philosophy, in such extreme hands, has threatened, by turns, to exterminate reason through a tyrannical abuse of revelation, or to supersede revelation through an impious usurpation of reason.

The Results in Civilization.

Descending now to the plane of common life, where theories are reduced to practice and ideas issue in events, we shall there behold the great speculative conflict attended with corresponding convulsions and disasters, in different countries, through successive generations, like the havoc and misery which mark the track of contending armies.

At the one extreme, by an infidel philosophy, civilization has repeatedly been forced into collision with Christianity. Italian infidelity in the sixteenth century, basking at the very court of the Holy Father, fostered immorality, tyranny, and impiety in the clergy, whilst it practised astrology, magic, and quackery upon the people, until public indignation forced it to assume the garb of virtue. English infidelity in the seventeenth century, flushed with its victory over puritanism at the court of Charles the Second, made religion the jest of the aristocracy, leavened the Church with hypocrisy, and, though repudiated by the nation, corrupted, through its literature, the faith of other lands for generations. French infidelity in the eighteenth century, breaking forth in the revolutionary convention, decreed the abolition of worship and the priesthood, converted the churches into temples of reason, inscribed over the cemeteries, "Death is an eternal sleep," and reigned amid orgies of blood and terror which sent a shudder throughout Christendom. German infidelity in the nineteenth century, bursting through the jargon of philosophy, proclaimed undisguisedly the reign of lust, the worship of self, the downfall of the Church, and at length, from the National Assembly itself, threatened an anarchy which the moral earnestness of the people alone averted. And American infidelity in our own day, by its bold attacks upon Christian institutions in the form of free love, necromancy and secularism, is already, ever and anon, menacing the social order.

At the other extreme, however, by a fanatical faith Christianity has repeatedly been forced into collision with civilization. It was Italian fanaticism which, from the tribunal of the Inquisition, consigned the first martyrs of philosophy to the dungeon and the flames, inscribed each new discovery of sci-

ence in the index of heresies, kindled the fagot of religious persecution, and convulsed Europe with the desolating wars of the Reformation. It was French fanaticism which, by the decrees of the Sorbonne, arrayed learning for the time on the side of superstition, destroyed or expelled the soundest culture of the nation by the massacre of St. Bartholomew, fostered hypocrisy, corruption, and tyranny in the court and aristocracy, and thus, in the issue, provoked the horrors of the Revolution. It was English fanaticism which, through the successive wars of episcopacy, presbytery and independency, subverted the entire social fabric of Great Britain, and at length achieved, in the Act of Uniformity, that political massacre of dissent, whose ghost now comes back in the shape of disestablishment. If German fanaticism has appeared only in such exceptional disorders as those of the Anabaptists and other later sectaries, it may be because the conservative and speculative habit of the people but seldom precipitates it into action. And what American fanaticism can accomplish has already been shown in the convulsions connected with slavery, polygamy, and the mediæval panics of the Millerites.

Thus the extremists, on both sides, reach a like degree of divergence and opposition, and in their aims or tendencies are both destructive. Were either to prevail against the other, an original power of human nature would be annulled, and a vast accumulation of human knowledge dispersed. The real issue made by them, however unwittingly, is whether science shall extirpate religion, or religion shall extirpate science; or, stated more practically, whether civilization shall reduce Christianity to superstition, or Christianity remand civilization to barbarism.

Now, although such extreme errors are by no means equally pernicious, yet they plainly both proceed upon the same false view of the normal relations of reason and revelation. There is nothing in the idea of either to necessitate collision or conflict. Viewed in the abstract, the finite mind and the Infinite Mind, the divine intelligence and the human intelligence, cannot be presumed to be in a state of logical opposition. Each may have its own distinct sphere, method, and aim; and, at the same time, safely concede the like to the other. To put

them at war, would be only to force them into abnormal action. It may be taken as an axiom, that it is at once contrary to reason to oppose revelation, and contrary to revelation to oppose reason. So that, when any antagonism springs up between them, it is simply to be treated as anomalous.

In the first place, it is apparent rather than real. Often it consists of mere logomachy, which would disappear on a close comparison of terms and views. Religious creeds and scientific theories come into conflict, not because of any actual disagreement between the facts of nature and the truths of Scripture, but solely because of some false exegesis on the one side, or some wrong induction on the other. All truth must be found consistent with itself, when freed from admixture with error.

In the second place, it is temporary rather than permanent. The least developed sciences are those which are in this stage of antagonism, while the most exact and complete are already passing into one of lasting harmony. As our science and our theology mature, they will correct and complement each other, until at length they shall stand forth coincident. The unity of knowledge is as axiomatic as the unity of truth.

In the third place, it is in some of its effects, salutary rather than hurtful. By means of it, the several growths of reason and revelation in history have been disentangled, and left to a freer and more fruitful development. Science has been emancipated from ecclesiastical domination and fanatical interference, and religion from unsafe alliances with bigotry and superstition; while in both departments new enthusiasms have been kindled and a minuter division of labors promoted.

We conclude, therefore, that the two interests, whatever else they may be, are not hostile and exterminant, but distinct and separate, limiting each other with boundaries which neither can pass except at its own peril. Let the religionist who would invade science be warned by that saying of a Christian sage, "If you will try to chop iron, the axe becomes unable to cut even wood;" and let the scientist who would invade religion be warned by that heathen fable, wherein "men and gods are represented as unable to draw Jupiter to earth, but Jupiter able to draw them up to heaven."

CHAPTER III.

MODERN INDIFFERENTISM BETWEEN SCIENCE AND RELIGION.

If a truce should be proclaimed between two great armies on the brink of battle, we can imagine what a change would pass over the spectacle; how the advancing squadrons would everywhere be recalled, the noise and dust of the conflict cease, and the long, serried ranks rest upon their arms, whilst ambassadors from both sides, in high council, were exchanging hollow forms of peace amid the stern realities of war. It might even seem for a little space as if some terms were to be arranged, giving divided empire to both sovereigns, until suddenly the signal of renewed hostilities would dispel the dream and show it to have been but like the portentous lull before a summer's storm.

"And so," says the Duke of Argyll, "we see the men of Theology coming out to parley with the men of Science,—a white flag in their hands, and saying, 'If you will let us alone, we will do the same by you. Keep to your province, do not enter ours. The Reign of Law which you proclaim we admit—outside these walls, but not within them. Let there be peace between us.' But this will never do. There can be no such treaty dividing the domain of truth."

We have termed this class of thinkers, whether they are in the interest of religion or of science, the Indifferentists, because they would seclude themselves from each other in a strict indifference; the one, by holding to revelation without reason, and the other, by holding to reason without revela-

tion. They stand aloof from every question into which Scripture and Science can enter. In mutual dread of invasion, they seem to have agreed upon a division and joint occupancy of the domain of truth, while as to any common ground between them, they will keep up a kind of armed neutrality or truce, until either shall have demonstrated his power to take and hold it in defiance of the other. In a word, they are the men who cry, Peace, when there is no peace in all the wide field of philosophy.

As compared with the party of Extremists already noticed, they are only less averse to any proper settlement of the question before us. At heart they may in fact cherish the same mutual hostility; but from a dislike of controversy, or from a disingenuous habit of reserve, or from a temper of compromising, or from a staid, conservative spirit, or from some narrowness of mental view, they fail to see both sides of the question at once, and utterly neglect the one interest in their exclusive pursuit of the other. Let us, however, sketch them separately before we proceed to estimate their common errors.

On the one side, we find the indifferent religionist or religious indifferentist, who does not invade but simply ignores, the province of science. In his view, the facts of Nature have nothing to do with the truths of Scripture, and are to be treated as absolutely irrelevant. When any scientific theory runs counter to his exegesis, he is at no pains to inquire into the relative credibility and value of either; and should any scientific discovery shed new illustration upon a revealed doctrine, he shuns it as a questionable admixture of sacred with secular or profane learning. He still clings to the interpretations of a former and darker age, in the face of modern research, and refuses either to correct or improve them. Theology, the true mother of the sciences, is turned by him into a monster, who spurns them away even when they come with joined hands to kneel at her feet.

On the other side, we find the indifferent scientist or scientific indifferentist, who does not invade, but simply ignores the province of religion. Its mysteries are, in his eyes, too transcendental and vague to be included in exact inquiries.

Should his theories run against any reigning doctrine or interpretation of Scripture, he is in no wise troubled at the discrepancy; or should they seem to require any of its ideas and records for their own rational support, he almost scorns them as unscientific and prejudicial. Even his vocabulary has become more Pagan than Christian. His God is but the abstraction of a Great First Cause, or a personification called Nature; all divine manifestations and purposes are, in his view, mere phenomena, with their causes and laws; creation, as a whole, is but a cosmos or system without an intelligent Author, or an intelligible object, to give it consistency and grandeur. Science, torn by him from that theology which nurtured her, is left to wander as an orphaned vagabond in the universe.

If we seek the historical beginnings of such indifferentism, in either of its forms, we shall find them wherever the love of a theory or of a creed has proved stronger than the love of truth. It was somewhat of this spirit, under its scientific phase, which led the early Greek sophists, whilst observing outward respect for the reigning mythology, to corrupt the faith of the Athenian youth, like certain savants in our day, by adroit word-tricks and a specious show of little knowledge. It was somewhat of this spirit, under its religious phase, which prompted the early Latin fathers, whilst appreciating pagan learning, to resist its introduction into the Church, like certain divines of our time, from a well-meant fear that it might sophisticate the clergy or the people. And even among the later Latin schoolmen, when the scholastic phrenzy was at its height, there were not wanting instances, here and there, of an ironical skepticism or of an ascetic pietism, which were but masked forms of the same spirit. But it was not until the Reformation had been driven to the opposite extremes, described in the last lecture, that a recoil ensued towards that mutual indifference, that studied avoidance, which has taken the place of the open conflicts of past generations. It was after modern sectarianism had issued in a medley of creeds and churches, that many scientists became latitudinarian upon religious questions; and it was after modern infidelity had made disastrous inroads upon orthodoxy, that many reli-

gionists grew distrustful of scientific researches. And now at length we behold, as the two resulting and most conspicuous phases of current thought, on the one side, an imposing sciolism, which would politely bow all religion out of science, and on the other side, a lofty dogmatism, which would austerely frown all science out of religion.

In proceeding now to sketch the progress of this indifferent spirit, we shall not attempt, strictly speaking, a full philosophical history of the sciences, showing their internal growth and external connection; nor yet a full philosophical history of dogmas, unfolding their varied phases and relations; though an outline of both these histories must necessarily be involved. But our object will be simply to trace in each science that great schism between rational and revealed knowledge which, for the last three centuries, has been gradually advancing; first through a stage of healthful separation, marked by ascertained facts and truths; then through a stage of unconscious avoidance filled with various hypotheses and dogmas; and at length to a stage of open rupture issuing in mere sciolism on the rational side, and dogmatism on the revealed side, with a corresponding breach throughout all modern civilization. In other words, we shall present two parallel histories of the dividing sciences, as they will appear in three separative stages, more or less successive and chronological, according to the following scheme:

THE GREAT SCHISM BETWEEN SCIENCE AND RELIGION.

	IN	
1st Stage, A.D. 1700. Scientific Facts and Theories.	ASTRONOMY. GEOLOGY. ANTHROPOLOGY. PSYCHOLOGY. SOCIOLOGY. THEOLOGY. METAPHYSICS. PHILOSOPHY. CIVILIZATION.	1st Stage, A.D. 1700. Religious Truths & Doctrines
2d Stage, A.D. 1800. Scientific Hypotheses.		2d Stage, A.D. 1800. Religious Dogmas.
3d Stage, A.D. 1900. Science without Religion.		3d Stage, A.D. 1900. Religion without Science.

For the materials of these sketches we must rely, primarily, upon such historians of science as the elder Morell, Playfair, Whewell, Cuvier, Comte, Pouchet, Humboldt, Lyell, Somerville, and upon such historians of doctrine as Hase, Hagenbach, Dorner, Meyer, Hodge, Shedd, and Krauth; but also and mainly upon the authorities cited, whose opinions will be found stated, substantially, in their own language. It may be well further to remark that the terms sciolists and dogmatists are only used to denote such scientists as avowedly ignore all religious truths, and such religionists as consciously exclude all scientific facts, rather than those whose mutual indifference may simply be due to absorption in their special pursuits.

Reviewing first the physical sciences, we shall there find that amid the border warfare of infidels and apologists during the last three centuries, the great body of the scientific specialists and professional divines have secluded themselves in their own provinces, where they have been fain to construct separate systems of truth, until by gradual avoidance in each natural science, they dwell apart as mere sciolists and dogmatists, like neighboring potentates, whose former raids and forays have died into an armed frontier.

The Schism in Astronomy.

In astronomy, for example, the two antagonists have long since separated, by divergent steps, into a fixed indifference.

On the rational side of the science, there have been successive departures from the revealed doctrine of the heavens. The first and most legitimate stage was that of abandoning the false Biblical astronomy of the fathers and schoolmen. It was the time when the telescope was disclosing innumerable worlds beyond the heaven of the Church, and enthusiastic explorers were revolutionizing the whole popular conception of the world. Nicholas of Cusa, as early as the fifteenth century, in his "Learned Ignorance," had revived the Pythagorean notion of the earth's revolution around the sun, considered as the noblest of the heavenly bodies, the source of heat and light, and the great central hearth of the universe; but the suggestion seemed then so fanciful, that it was treated

rather as a harmless paradox than as a heresy. Nicholas Copernicus, known as the founder of the solar system, in his celebrated treatise on the "Revolutions of the Celestial Orbs," propounding the conjecture of Cusa as a mathematical theorem, demonstrated the motions of the earth and planets upon their axes and around the sun, that great lamp of the world, placed in the midst of the temple of nature; deprecating the while not so much the attacks of astronomers as of divines, or vain babblers, as he terms them, who, knowing nothing of mathematics, yet assume the right of judging on account of some text of Scripture, perversely wrested to their purpose. Galileo, the first great astronomical discoverer, proceeding to verify the hypothesis of Copernicus by the telescope, announced in his "Sidereal Messenger" the satellites of Jupiter as a visible model of the solar system, whilst in his "Dialogues" he defended it with mathematical reasonings against the erroneous biblical interpretation which hindered its popular reception. The indomitable Kepler, by the extraordinary calculations in his great work on the "Motions of Mars," which he likened to a long battle with that planet, described the exact form and dimensions of the celestial orbits, and demolished the complicated crystalline globes which had been revolving around the orthodox horizon since the time of Ptolemy; advising that whoever is too weak to receive the Copernican system without harm to his piety, should leave the school of astronomy and worship God through his natural eyes, with which alone he can see. Sir Isaac Newton, the greatest of devout astronomers, in his immortal "Principles of Natural Philosophy," completing the researches of Copernicus, Galileo, and Newton, with the discovery of universal gravitation, fully demonstrated that heliocentric system of the ancient Greeks which, after lying buried under the traditions of the Church, has now become the orthodox theory of Christendom. Euler, Clairvault, La Grange and La Place, together worked upon the mechanical problem of the solar system until they established its perfect harmony and stability by showing the very perturbations of the planets to be but periodical movements, like immense pendulums, beating ages for seconds. At length the two Herschels, Sir William and Sir

John, successively gauging the northern and southern hemispheres with the telescope, unveiled the very heaven of heavens beyond our solar firmament, as they resolved nebulæ into stars, stars into suns, and suns into galaxies, crowded together like golden sands, each grain a world, and so remote that ages must have sped, while the light flew which makes them visible to our eye. And since that time, other great astronomers such as Bessel, Struve and Arago, Kirchoff, Secchi and Huggins have been occupied with the remaining problems of determining the different astral systems, the revolution of our own solar system among them, even their chemical constitution and phenomena, as disclosed by the spectroscope, and their probable combination in some one universal system, regulated by physical laws.

The next more questionable stage of indifference, was the gradual substitution of a hypothetical astronomy, in place of the true biblical astronomy, which still remained unharmed. The whole doctrine of creation being ignored, numerous speculations arose as to the origin, the design, and the destiny of the heavenly bodies.

As to their origin, there were two rival hypotheses. The one was that of a spontaneous growth of worlds. It had been held by Democritus and Lucretius that the original atoms struggling together throughout space and time, after infinite trials brought forth from chaos the existing universe as the fittest to survive the mazy conflict. And though the hypothesis had slumbered during the early and middle ages of the church, until it was revived by Bruno and Gassendi in the seventeenth century, yet it has since come forth again with renewed vigor and in more scientific forms. Descartes who is said to have been the first to indulge the pleasing fancy of making a world, in a "Treatise on the Universe," which was awhile withheld for fear of the fate of Galileo, but afterwards incorporated in his Principia, had proposed to show how the solar system, though created perfect, might have arisen on mechanical principles, from a series of vortices, or vast eddies of different kinds of matter whirling, under divine impulses, with the sun and planets, like boats in a maelstrom. Leibnitz, with more mechanical know-

ledge than Descartes, and greater philosophical boldness, applied his peculiar theory of monads in "A New Physical Hypothesis not to be despised either by the Copernicans or by the Tychonians," according to which the heavenly bodies were composed of self-acting atoms, ever propagating and sustaining, by their own impulses, the complicated revolutions of the solar system. Immanuel Kant, employing the more advanced physics of his day in his "General Natural History and Theory of the Celestial Bodies," attempted to account for the mechanical origin of the universe by supposing an immensity of attractive and repulsive particles, out of which the sun and planets have been developed. At length La Place, in his celebrated "System of the Universe," completed the speculations of Descartes, Leibnitz, and Kant by postulating throughout primeval space a luminous vapor or fire-mist which, as it revolved and cooled, became condensed, first into a central igneous body, like the sun; then into rotating rings, such as those of Saturn; then successively into gaseous and watery globes, like Jupiter and Uranus; and at length into solid shells, such as that which encloses the fiery core of our earth.

And these speculations were soon extended to the remotest stars and galaxies. Kepler, Kant, and Lambert had already argued, from their respective theories, that the luminous clouds floating in space were but relics of the material out of which the heavenly bodies had been formed. The elder Herschel, applying the hypothesis of La Place to the sidereal heavens, conjectured the unresolved nebulæ to be cosmical masses in the act of condensing into suns and planets, and even detected in some of them, by the telescope, supposed changes of structure, lucid points glittering as the nuclei of new worlds, or rather of ancient worlds, so remote that ages must elapse ere the tardy light can paint their finished form in the eye of man. Henry Schubert, who adopted for a time the views of Herschel, in his treatise on the "Primitive World of Fixed Stars," poetically likened these new-born worlds to great golden birds coming forth from the egg, or still covered with parts of the shell, remaining from the unconsumed nebulous matter. Alexander Humboldt, in

his "Cosmos," describes the whole starry heavens as a vast nursery of worlds, teeming with the greatest variety of cosmical productions, as trees in a forest are seen coexisting in all stages of growth, and maintains that the celestial spectacle is only in appearance simultaneous and without perspective, having beyond it an endless succession of stars and galaxies too distant to be portrayed as yet in other than their embryo forms, as mere films and dots of light. Johannes von Gumpach, in an elaborate work entitled "Baby-Worlds," even attributes organic life to the heavenly bodies, describing comets and nebulæ as the infant members of the planetary family, and heirs apparent to the solar empire. Professor Proctor also, in his recent Lectures, holds to a literal birth and growth of planets and suns by an accretion, rather than contraction of nebulous matter as massed in solid nuclei and fed by meteors, comets and star-dust, at a rate so slow that the earth could not have grown more than an inch in many millions of years. And the latest advocates of the nebular theory now claim that the spectroscope is actually verifying it by exhibiting in the chemical constitution of different stars all the successive phases of cosmic growth, nebula, sun and plant, as plainly bursting into life throughout the heavens, as the germ, leaf and flower at our feet.

But the other hypothesis was that of a fixed series of worlds. It had been taught by Plato and Cicero, as well as the fathers and the schoolmen, that the universe was originally created as a cosmos or mundus; and ever since has remained in its finished order and beauty. And upon this doctrine not a few modern astronomers have proceeded in their cosmical speculations. Galileo, even in advance of the telescopic resolution of nebulæ, refused to believe them other than distant clusters of stars. The elder Herschel himself, though he finally adopted the opinion that they were mere remnants of our own solar or astral system, drifting within the visible heavens, had been at first inclined to regard them as extremely remote galaxies outside of the milky way, and not yet in reach of the telescope. The younger Herschel, advancing beyond his father's explorations to the conclusion that all nebulæ are but clustered suns, a sort of star-dust of worlds, suggested that

the coexistence of a series of organized suns and planets, in different stages of relative perfection, does not necessarily imply transition and development, if we suppose all progress in the present state of nature to have long since reached its end, as we see among the animal species. Schubert, who passed from the elder to the younger Herschel, in his "Fabric of the World," described the various forms of nebular and stellar systems, through all their grades, as but parts of one vast coordained whole which, like the organic scale from the mollusk to the mammal, may have originated together, and henceforth subsist side by side. Professor Lamont of Munich, an eminent observer in the same field, argued from the oldest sources of information as to the condition of the heavens, that the whole cosmical structure, after some sort of a formative period, has long since passed into a state of sustained equilibrium, and all preserving order, like that which La Place has shown to exist in our solar system. Mädler, the distinguished astronomer of Dorpat, reasoning from the same analogy of the solar system, in his work entitled the "Central Sun," has challenged the posterity of astronomers to the problem that the whole sidereal heavens from the outermost nebulæ will be found to include a series of concentric galaxies or zones of suns and planets circling, together with our own little system, about a preponderating cluster of suns, or common centre of gravity in the imperial group of the Pleiades, near the bright star Alcyone. And it may be that the spectroscope will yet combine with the telescope to show that the order and variety which obtain upon earth are but reflected throughout the heavens in countless species of worlds, ranging from the unformed nebula that wanders on the verge of space up to the most richly garnished planet that careers around the brightest sun.

As to the design of the heavenly bodies, two opposite hypotheses also arose. One was that of a plurality of inhabited worlds. Newton and Bentley treated this natural suggestion as a grave question of science. Christian Huyghens, the distinguished Dutch astronomer, bequeathed to the world as his best legacy, a "Cosmotheoros," or Theory of the Universe, containing ingenious conjectures with regard to the

celestial orbs, their garniture, the inhabitants adapted to their structure, and even their moral as well as physical condition. Sir William Herschel, more recently, in the "Philosophical Transactions," inferred from the climate and scenery of the moon, that it must be inhabited like our earth, and agreed with Arago in characterizing the sun as richly stored with inhabitants dwelling upon an opaque globe behind his dazzling photosphere. Dr. Lardner, in his "Museum of Science and Art," argued, from the analogy of the polar and tropical zones of our globe, that the outer planets farthest from the sun, Jupiter, Saturn and Neptune, as well as the inner planets, are tenanted with races closely resembling, if not identical, with those with which the earth is peopled. Professor Owen, the distinguished naturalist, in his work on "The Nature of Limbs," still more profoundly reasoned from the doctrine of archetypes or ideals, as well as from the mechanism of the sun and satellites, that the inhabitants of the planets may be organized on the vertebrate type, affording numerous conceivable examples not realized in this little orb of ours. Sir Humphrey Davy, in his "Consolations of Travel," imagined that he saw in the planet Saturn highly organized beings, whose gifted intellects were endowed with membranous bodies and convoluted probosces, as organs of exquisite sensibility and perception. And these bold conjectures have been pushed into the remotest stellar worlds. Sir John Herschel, by his telescopic resolution of nebulæ into suns, believed himself simply to have unveiled a populous immensity too bewildering for mortal fancy, and even speculated upon the probable scenery of those distant seats of intelligence, as reflected in a starry kaleidoscope, varied as the flowers of spring and more brilliant than the most superb jewelry. Schubert, following Herschel with still more exuberant fancy, contrasted the ponderous globes of our solar system, as swayed by antagonistic forces, like crude, massive machinery, with those harmonious spheres of light whose etherial inhabitants bask under a thousand suns, know neither day nor night, nor birth nor death, and are forever strangers to terror, to sickness and to tears. The great Danish naturalist, Oersted, by the profound conjectures in his treatise on "The Soul in Nature,"

peopled the mighty amphitheatre of worlds, from our little planetary group up through the circling suns and galaxies, with corresponding orders of intelligence, ranged in different stages of cosmic development, and together forming one universal organism of reason. Professor Proctor, in his "Other Worlds than Ours," has recently conjectured from the heat and light of the stars that, like our sun, they are encircled with life-bearing worlds, which they nourish, and that even the works of intelligent creatures may be going on in the planets of Vega, Capella, and the blazing Sirius. M. Flammarion, in his treatise on Celestial Marvels, not only argues from physical analogies that the planets, like the earth, are kindled by the sun into seats of life and thought, but dilates upon the magnificent scenery of other solar systems in Orion and Cassiopea, whose blue and red and green suns must produce for their attendant orbs a succession of brilliant days through all the colors of the spectrum. And indeed, with the telescope and spectroscope already unfolding the mechanical and chemical constitution of the most distant planets and stars, it would seem not at all incredible that the question of their organic character or habitability may yet somehow be brought to the test of physical investigation.

But the other hypothesis was, that our earth is the only habitable world. And it has not been without some distinguished advocates. Galileo seems to have treated the notion of planetary races as a mere jest rather than as a scientific hypothesis; perhaps, however, because his enemies were inclined to treat it as a heresy. Kepler, with no such restraints upon him, in his translation of Plutarch's "Dialogues on the Face of the Moon," indulged in sportive reflections upon the inhabitants of that satellite, which he named Levana. Fontanelle, in his elegant "Conversations on the Plurality of Worlds," popularizing a pleasantry which Lactantius had assailed in the writings of Lucian, entertained the wits of Paris with lively disquisitions on the scenery of the neighboring planets, and the Martial, Mercurial, Jovial, and Saturnine character of their respective inhabitants. Voltaire, in one of his satirical romances, represents the secretary of the Academy of Sciences in the planet Saturn setting out on

a philosophical tour of the universe with Micromegas, an inhabitant of the Dog-star, after mutually complaining of their limited means of knowledge, though the one had seventy senses and the other a thousand.

And it was not long before this ironical treatment of the subject began to assume the form of a scientific scepticism, with advancing knowledge of the physical characteristics of the different heavenly bodies. All astronomers have probably maintained, with the elder Herschel, that comets and asteroids are incapable of sustaining organized life, being mere fragments of the original nebulosity or globules not yet condensed into a habitable orb. The younger Herschel admitted, what has since been proved, that the moon at least is destitute of anything like human existence, having a mere volcanic surface, without air or water. Professor Phaff, in his work on "Man and the Stars," whilst attributing a highly refined organization to the stellar spheres, regarded the planets around us as mere inchoate worlds, at most possessed of inferior plants or fantastic creatures, and serving no higher purpose than luminaries to our earth. The late Dr. Whewell, now known to be the author of the anonymous "Essay on the Plurality of Worlds," startled scientific circles with the theory that our planet is the only world in the universe; that it revolves in that temperate zone of the solar system between the extremes of heat and cold, where alone high organic life is possible; that the outer planets are mere globes of water and ice, while the inner are composed of cinder and slag; and that the sun itself is but the molten nucleus of a primitive nebula, whose gaseous fragments, long since extinguished, now only shine, like the corruscations of a fire-wheel, in the form of comets, meteors, and stars. Professor Winchell, in a little treatise on the "Geology of the Stars," has argued from recent spectroscopic researches, that suns are but condensed nebulæ or incandescent mist; that planets are more advanced worlds than suns, having gradually cooled and become encrusted with strata; that the nearer planets are still the abodes of monsters, such as once tenanted our earth, before the appearance of man; and that the older planets have already passed the habitable stage, the moon remaining but as a sort

of fossil world or ancient cinder suspended in the heavens. Professor Proctor also has suggested that we have no right to assume that every instant in the history of a world should be made available for intelligent life, but that in fact the chances are millions of millions to one against any special planet being inhabited, if we judge by the analogy of the brief time during which man has appeared upon the earth. And certainly geology may unite with astronomy in suggesting that the climatic transformations of different globes, as they change their axes and orbits, must involve corresponding cycles of life and death, a kind of metempsychosis of worlds, so that but one or a few of them could become habitable at a time.

Besides these questions, the destiny of the heavenly bodies has also been a fruitful theme of speculation. Some astronomers have favored the notion of a final chaos. Newton had very early expressed his conviction that without some divine interposition, the accumulating perturbations of the planets would ultimately bring the whole system into confusion, and speculated upon the dangers of a collision with comets, on the supposition of their enormous heat and solidity. Halley deprecated the approach of the great comet of 1680, as likely to crush the earth or change the seasons; and on the assumption that the celestial orbits are contracting slowly through the resistance of an etherial medium, anticipated a time when the planets would be drawn into the sun, and the whole existing order be remanded to the ancient chaos. And these views, in later times, have received still more scientific expression. It has been maintained by such physicists, as Helmholtz, Grove, and Tyndal that all material forces, mechanical, thermal and vital, with their actions and reactions, must gradually tend to equilibrium and rest; that perpetual motion in the machinery of the heavens is as impossible as in any mechanism upon earth; that the friction of the planets and the cooling of the sun will ultimately cause them to be precipitated upon each other and, through their collision, dissipated into the igneous vapor from which they sprang; and that, consequently, without some infinite miracle, all other suns and galaxies of suns, as they sweep with diminishing force around the dreadful vortex, must at length be whelmed in a general

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wreck of matter and crush of worlds. Professor Stephen Alexander has argued that the very forms of the nebulæ and clusters, such as the broken ring, spiral and fire-wheel, indicate a stupendous process of mechanical disruption and dispersion throughout the whole sidereal heavens. And Professor Winchell, in his "Sketches of Creation," describes the awful catastrophe which must ensue when the last man shall gaze upon the frozen earth, when the planets, one after another, shall tumble, as charred ruins, into the sun, when the suns themselves shall be piled together into a cold and lifeless mass, as exhausted warriors upon a battle-field, and stagnation and death settle upon the spent powers of nature.

Other astronomers, however, have leaned toward the notion of a permanent cosmos. La Place, in opposition to the conjectures of Newton, claimed to have mathematically proved that the secular agitations of the moon and planets, instead of being cumulative and destructive, were periodical and conservative, absolutely ensuring the stability of the solar system, unless there should be some foreign cause of disturbance. Arago maintained that no such disturbance could arise from the incursion of comets, the periodical return of which Halley and Clairvault had predicted and verified, whilst the discovery of their transparent, vaporous nature was fitted to dispel all fears of disaster, even in case of their collision with the earth. Mrs. Somerville, in her "Connection of the Physical Sciences," has suggested that the supposed etherial medium could not retard the primitive momentum of the planets, unless that medium itself be rotating in a contrary direction, as seems to be the case with the retrograde comets, and that the different sidereal systems, so far from deranging our own solar system, may themselves be revolving with it around a common centre of the whole creation as the only point of absolute and eternal repose. And to this idea of a universal mechanical equilibrium has been added one of a thermal or chemical nature, ensuring periodic variations of heat, light and life amid all secular inequalities, the ebb and flow of a vis viva of the universe, which is itself a constant quantity. Some modern physicists have accordingly denied that there is any such uncompensated cooling and shrinkage of the planets as would ulti-

mately destroy their life-bearing powers. Mayer, the great German physicist, in his essay on Celestial Dynamics, has maintained that the sun itself is like an immense furnace, ever gaining as well as losing heat, through a supply of cosmical matter, raining down upon it from the interplanetary spaces in the form of ærolites, meteoric hail, and luminous dust, becoming visible to the eye as the zodiacal light. Poisson hazarded the bold conjecture that the entire solar system, as it careers amid myriads of blazing suns, instead of journeying toward night and death, may be passing through hot and cold regions of space, and possibly revolving between extremes of temperature, like the summer and winter of our earth, but through inconceivably vaster cycles, with ever-changing climates and histories. And it has even been fancied, what indeed almost paralyzes fancy itself, that the evolution of nebulæ into planets and dissolution of planets into nebulæ, which is supposed to be occurring throughout infinite space and time, may itself be periodic rather than catastrophic, a sort of normal birth and death of worlds, amid which man sports upon the earth like the merest animalcule of a bubble, vanishing in the sunshine.

The third and last stage of perfect indifference, which has been reached in our day, is that of repudiating the whole biblical astronomy as no longer of any scientific authority and value. Whilst some astronomers may have ignored Scripture doctrines simply from philosophical prudence and taste, others have rejected them as working hypotheses, or even as related truths essential to a complete theory of the heavens. La Place himself, it will be remembered, could distinctly avow that in his "System of the World" he had no need for the hypothesis of a God. Alexander Humboldt, it could not fail to be remarked, has sketched a "Cosmos" in which the name of God is not to be found, concluding his sublime picture of the heavens and earth with no higher hope than that it may promote a more animated recognition of the universe as a whole. Mr. Herbert Spencer, in an essay on the Nebular Hypothesis, whilst claiming that it renders the development of the heavens and earth perfectly comprehensible, insists that their origin is absolutely inconceivable, with no

more allusion to the first verse of Genesis than if it had never been written. Professor Lovering declared, from the chair of the American Scientific Association, that in his view, astronomy has no more to do with theology than with jurisprudence. Professor Tyndall, who occasionally quotes Scripture in his scientific speculations, in an essay on "Matter and Force," asserts that the question of Napoleon to a knot of infidel savants, "Who made the heavens?" must remain unanswered. And Doctor Maudsley, with still less reserve, in his recent article on the "Limits of Philosophical Inquiry," at the close of an eloquent description of the insignificance of man in comparison with the sidereal universe, wonders, in the very language of the Psalmist, that he should presume to affirm whose glory the heavens declare, whose handiwork the firmament showeth.

On the revealed side of the same science, however, there have been meanwhile corresponding departures from the rational theory of the heavens. It was by like stages also that this mere separation grew into a schism. The first stage was that of abandoning the false scientific astronomy of the fathers and schoolmen. It should be remembered that Nicholas of Cusa and Copernicus were themselves orthodox divines, as well as scientists, and that the chief reformers aided in freeing the astronomical portions of the Scriptures from the mediæval superstitions of astrology and divination. Luther, though he still held the Ptolemaic notion that the firmament was a crystal globe turned swiftly around the earth by some angel, denounced the star-peepers and horoscope mongers who plead Scripture authority for their haphazard work and idolatry. Calvin, in his Genesis, defended the Mosaic doctrine of the signs of heaven for their chronological value against the Chaldeans and fanatics, who divined everything from the aspects of the stars. Turrettin, through a whole chapter of his "Institutes of Theology," reasoned elaborately against a prevalent Scriptural argument for judicial astrology, as the art of prejudging human events by the constellations was then termed. The Westminster divines, in their "Annotations" upon Genesis, though excluding the Copernican theory as not yet sufficiently demonstrated, still

admitted its consistency with the Mosaic system, and emphasized the doctrine of creation as both an article of faith and a maxim in philosophy. And gradually, with advancing science, by a line of astronomical theologians, from Derham to Chalmers, the way has been opened for redefining the whole doctrine of the heavens, considered as a divine creation and the abode of the Father and the angels.

But, in the next more questionable stage of indifference, still remained numerous dogmatic divines apparently unconscious of the new scientific astronomy which was emerging. The great mass of Greek and Roman doctors, as well as Jewish rabbins, simply adhered to the traditional dogmas respecting the creation, the angels, and the new heavens and earth; and even Protestant theologians betrayed but little knowledge of current astronomical discoveries and speculations. As to the doctrine of creation, for example, all classes were still substantially agreed with the fathers and schoolmen. Roman Catholic divines simply re-affirmed the ancient teachings of the church. Clement of Alexandria, with the other Greek fathers, and in opposition both to the Stoics and to the Epicureans, had delighted to represent the creation of the world as a voluntary act of God's love, not for His own sake, who needed nothing, but for the sake of the human race alone. St. Augustine, in his Confessions, had more precisely taught that God was the author of time, as it could not exist before creatures to measure it; that in the beginning He fashioned the heavens and earth, not out of Himself, but of nothing; and that He created them from no necessity, but of His own free will and for the good of man. Thomas Aquinas also, agreeing with Augustine, maintained that God willed from eternity that the world should be and not that it should be from eternity; that with the world He created both space and time; and that His design was the communication to His creatures of His own perfection as the highest expression of His goodness. Hugh of St. Victor held that God was not the mere former but the author of matter; and since the Creator was self-sufficient and man the last to be created, we receive both the good beneath us and the good above us, the former to supply our necessities and the latter to constitute our happiness.

And the same general views were re-affirmed by Suarez and Malebranche. It will be seen how readily such a doctrine could be connected with that Ptolemaic or geocentric theory of the heavens, which placed man in the midst of the world, as the final cause of the whole creation, with sun, moon and stars around him for the mere lights of his dwelling.

Protestant divines, whilst holding similar opinions as to the origin of creation, endeavored to define more precisely its mode and design. Melancthon, in his "Common Places," opposed the Stoical notion of eternal matter by representing the creative act as a simple fiat, commanding things to be which had not been before. Calvin, in his "Institutes," maintained that the actual work of creation was accomplished not in a moment, but in six days, in order to demonstrate that the heavens and earth were made for the sake of man, like a large and splendid mansion gorgeously constructed and exquisitely furnished. The Westminster divines, in their Confession of Faith, declared that God in the beginning, by the word of His power, made of nothing the world and all things therein, for Himself, for the manifestation of the glory of His eternal power, wisdom, and goodness. And Jonathan Edwards, in his profound "Dissertation concerning the End for which God created the World," argued elaborately from reason and Scripture, that the divine glory, the manifestation of the divine perfections, must have been the motive of the Creator, rather than the mere holiness or happiness of His creatures. It was too soon as yet, perhaps, to complement such a doctrine intelligently with that Copernican or heliocentric theory of the heavens which placed man upon a planet, as but an insignificant part of the creation, with countless worlds around him illustrating the glory of the Creator.

As to the doctrine of angels, there was not in all respects such full accordance. Roman divines continued to accept the patristic and scholastic definitions. The Nicene fathers, such as Basil, Ambrose, and Gregory, had ascribed to the angels a certain corporeity composed of ether or light, in accordance with their dazzling appearance as depicted in the Scriptures, and had referred them to the invisible world in distinction from that which is visible and earthly. St. Augustine had

taught that angels were the light created before all other creatures, having no superior but God, as men have none inferior but animals. The Council of the Lateran defined three classes of creatures, successively made in the beginning, first the spiritual or angelic, then the corporeal or earthly, and afterwards the human, composed of both body and soul. Gregory the Great, accepting the "Celestial Hierarchy" of Dionysius, which embraced three great orders, with three classes in each order, entitled them Angels, Archangels, Virtues; Powers, Principalities, Dominations; Thrones, Cherubim, and Seraphim; and likened them to the nine precious stones of paradise mentioned in Ezekiel. Peter Lombard, in his "Sentences," identified the creation of the heavens as the creation of angels, who were prior and superior to the whole material or earthly creation, and assigned them their place of abode above the visible firmament. Aquinas also characterized them as pure intelligences or intellectual substances not united to bodies, and indulged in subtle disquisitions upon the locality and scenery of heaven and hell, which he referred respectively to the upper and nether hemispheres; assigning to the constellation of the Little Carriage, or Great Bear as it is now termed, the marvellous function of transporting the souls of baptized infants to paradise, unless the rite had been imperfectly administered, when one of the wheels would break and the hapless spirit fall into purgatory. The great Catholic poet Dante, in his "Divina Comedia," simply illustrated the affinity of this celestial hierarchy with the Ptolemaic system by depicting the different orders of saints and angels in concentric zones, ascending through the planets toward the empyrean, or abode of the Virgin and Holy Trinity, with corresponding orders of lost spirits and demons descending into the under world. And the same dogmas substantially were decreed by the Council of Trent at the Reformation, and vindicated by Bellarmine and Bossuet.

Protestant divines, except as respects the worship and mediation of angels, which they rejected, were less precise in their opinions. Not only was the existence of purgatory both as a place and a state denied, but the material scenery and garniture of heaven and hell, in relation to the earth, were but

vaguely apprehended, and seldom blended with astronomical conceptions. There was simply a general agreement as to the spiritual nature, the immense number and the varied ranks of the angelic host, and their priority to man in the creation; and they were locally distributed, in accordance with the Ptolemaic system, in vague regions above and beneath, evil angels being confined in a bottomless abyss amid utter darkness, whilst good angels remained entranced before the throne of God in the third, or highest heaven, over the blue atmosphere and the starry firmament, except as either class occasionally visited the earth on errands of mercy or malice. The great Puritan poet Milton, in his "Paradise Lost and Regained," consistently with the existing state of astronomical knowledge, adhered to the geocentric and anthropocentric view of creation, by placing the earth, with tributary sun and planets, on the verge of chaos, midway heaven and hell, and representing man as the prize in a conflict of the supernal and infernal hosts, led by Christ and Satan. And probably, in the absence of more definite confessional statements, these were the prevailing opinions concerning the relation of the angelic races to the astronomical universe.

As to the new heavens and earth predicted in Scripture, there was a general agreement of all Christian divines with traditionary teachings, scholastic, patristic, and rabbinical. Even heathen sages, who may be supposed to have shared in this primitive revelation, such as the Chaldeans and Egyptians, had anticipated a final conflagration and renewal of the world at the time of a great conjunction of the planets in the constellation Cancer, to which sign of the zodiac it was supposed they would return, after revolving through the Annus Magnus, or Great Year, now known as the precession of the equinoxes. The Jewish rabbins, without any such astrological conception of the doctrine, have understood the prophetical descriptions of Isaiah and Ezekiel, as to the waxing old and passing away of the heavens and earth, to portend not merely the downfall of empires and nations, but an igneous destruction of the whole material creation, to which Philo added the ideas of its purification and restitution, though without admitting the office of fire in the process. The Greek fathers, such as

Clement, Origen, and Basil, in a somewhat rhetorical manner, associated the general conflagration, predicted by St. Peter, with the final judgment and new heavens and earth; attributing to its flames a renovating as well as punitive agency, a sort of purging of the whole material system from the dross of sin; whilst the Latin fathers, such as Augustine and Gregory the Great, by reserving the purifying fires in the underworld of Hades during the intermediate state until they should burst forth in the day of perdition, prepared the way for the dogma of purgatory. Aquinas, and the schoolmen generally, dwelt with theological subtlety upon the terrific imagery of the Scriptures respecting the end of the world, such as the darkening of the sun and moon; the falling of the stars; the sudden descent of the Son of Man in effulgent glory, with the whole angelic host surrounding Him, bearing His cross before Him, and blowing the trump of resurrection; the concourse of the dead rising from their graves to meet Him in the air; the judgment and destruction of the wicked amid the flames of dissolving nature, and the triumphal ascent of the righteous through the angelic ranks into the highest heavens. Paintings by the great masters, portraying the terrors of the last day, and hymns of the judgment, such as the "Dies Iræ," full of the wildest pathos, were but the artistic expressions of a dogmatic creed which pervaded the whole mediæval culture; and any unusual appearance in the heavens, such as a comet or meteoric shower, was enough to kindle the popular foreboding into dismay and panic, though as yet there could be no definite scientific conception of an astronomical catastrophe.

Protestant theologians retained the same opinions, without the notion of purgatorial fires. Some of them, indeed, as Quenstedt, defined the consummation of the world as an act of God by which the whole material universe, and all that it contains, except angels and men, is to be totally annihilated by fire, for the deliverance of the saints and the glory of the divine power and justice. Gerhard, without defending such a doctrine as an article of faith, or claiming for it the authority of the fathers, held it to be exactly conformed to the words of Scripture, and preferred to await the event itself without determining more precisely its character. Other divines, how-

ever, were not only inclined to restrict the catastrophe to a portion of the creation, to our own region of the astronomical heavens, the solar system or the earth and its atmospheric firmament, but regarded it, moreover, as involving a restoration or reconstruction of the world, an alteration of qualities and not an abolition of substance, the resurgence of the new heavens and earth, phœnix-like, from the ashes of the old extinguished creation. The heavens now wear their work-day clothes, but will then put on their Sunday garb, said Luther, in obvious allusion to the Psalmist's prediction, that they shall wax old as a garment and as a vesture shall be changed. Calvin, commenting upon St. Peter, insisted that the heavens and earth are to be purged by fire, that they may correspond with the kingdom of Christ, consumed only that they may be renovated, their substance still remaining the same. Turrettin, in one of his chapters, vindicates the same doctrine, with copious proofs from the Scriptures, the fathers, and even heathen writers. Millenarian divines, especially in times of political commotion, as during the English revolution, represented the destruction of the world as hourly impending in connection with the Second Advent of Christ. And these opinions, as everywhere expressed in sermons and hymns, when not pushed to a fanatical extreme, could not fail to produce a salutary impression of the transitory nature of all visible things. It will be remembered that astronomy had not yet advanced to the point where it could suggest the remarkable agreement of such predicted moral events with cosmical phenomena and tendencies, and they were, therefore, anticipated as mere celestial pageants or miraculous catastrophes from a geocentric point of view.

At length, in our day, has been reached the third and final stage of perfect indifference, where the whole scientific astronomy is openly repudiated as of no scriptural warrant or even dogmatic interest. Whilst some well-informed divines may exclude astronomical conceptions, under a feeling of theological or clerical propriety, others either admit frankly that the Chaldaic or Ptolemaic system is Scriptural, or deny that the Copernican system is essential to a complete doctrine of the heavens. Cardinal Baronius thus met the new astron-

omy with the extraordinary statement, that it was the intention of Holy Scripture to teach how to go to heaven, and not how heaven goes. Calvin, also, as an avowed Ptolemaist, only enunciated the narrow geocentric principle upon which many modern interpreters still proceed, when he insisted that Moses, speaking by the Holy Spirit, did not treat of the heavenly luminaries as an astronomer, but as it became a theologian, having regard to us rather than to the stars. The elder Rosenmuller, in his "Most Ancient History of the Earth," declared it an absurdity to require that inspired prophets should have spoken in accordance with the philosophy of Newton. Knapp, in his "Christian Theology," maintains that the Mosaic history of creation can neither be made to confirm nor to contradict the systems of Descartes, Buffon and Bergmann, and that every attempt to draw arguments from it either for or against any of them, is but labor thrown away. Professor Tayler Lewis, annotating Lange's Commentary, suggests that the tendency to treat the Bible heavens as the astronomical heavens, attributes to Moses too much science, or makes him a mere automatic medium of inspiration. Dr. Murphy of Belfast, in his "Genesis," whilst admitting the wonderful astronomy of the modern and western nations, insists that the only cosmos of which Moses was inspired to speak, was the sky and land of eastern Asia, as adapted to the little Jewish theocracy which was there to be founded. And acting upon these principles, without avowing them, great biblical scholars such as Hengstenberg, Tholuck and Alexander, living amidst the magnificent celestial discoveries of Herschel, Bessel and Arago, have descanted upon the astronomical psalms in the spirit of an ancient Hebrew peasant, as if the heavens declared no other glory than a spangled vault, and the firmament showed no higher handiwork than a gorgeous canopy.

And thus astronomy, under the indifferent spirit, instead of soaring toward God through the highest heavens, would either grovel beneath the narrow sky of our earth with Chaldean seers and Jewish rabbins, or grope after heathen sages among the fortuitous atoms of Epicurus into the godless void of Lucretius.

The Schism in Geology.

In geology, likewise, a similar separation of revealed and rational truth has proceeded on both sides, through like stages of growing indifference.

On the rational side of the science there have been successive departures from the revealed doctrine of the earth. The first and legitimate stage was that of expelling the false biblical geology of the schoolmen and divines. It was the time when bold navigators were sailing beyond the Christian geography of Cosmas, brave physicists were exorcising the long-forbidden alchemy, and the fossils of the museum were refuting the cosmogonies of the cloister. The practical geographers, Marco Polo, Columbus, De Gama, and Magellan, in spite of the anathemas of the church, had proved the vast extent and globular form of the earth. Boccaccio, the great Italian poet, at the very dawn of letters, in one of his romances, had taken the first step in palæontology, by describing the fossil shells in his native Tuscan hills as relics of a former sea, when as yet the Church was still defending them as mere illusory archetypes of the Creator, or sports of nature. John Baptist Porta, the Medici, and other Florentine academicians, under the ban of the church, led the way in the geological sciences of meteorology, physics, chemistry, botany, and mineralogy. Leonardo Da Vinci, who had been an engineer before he became a painter, and had discovered various organic remains whilst excavating a canal in Northern Italy, ridiculed the scholastic conceit that they could have been produced, together with accompanying pebbles and seaweeds, by some mysterious action of the stars. Fracastoro, the celebrated poet-physician of Verona, early in the sixteenth century, three hundred years ahead of his time, boldly assailed the traditional dogma, that the petrified shells of the Appenines had been carried thither by the Mosaic deluge, which he maintained was too transient to have buried the productions of the sea so deep in the mountains. Conrad Gesner, surnamed the Pliny of Germany, included among his voluminous works a treatise on "Fossil Objects," which he delineated according to their figures and species, but without deciding

whether they were animal remains or mineral products, as the learned were then maintaining. Bernard Palissy, a worthy forerunner of Cuvier, who collected the first cabinet of Natural history at Paris, and endeavored prematurely to connect chemistry with mineralogy, not only recognized the animality of fossil shells, but argued from their delicate and fragile structure that they could not have been transported by rough seas, but must have lived and died in the hills where they are found. Fabio Colonna, an eminent botanist, in his treatise on "Glossopetræ," the name of certain gems resembling the human tongue, carefully discriminated the external marks of fossils and the living species to which they had belonged, whilst the great naturalists of his time were still collecting them in the Vatican cabinet as mere curious petrifactions, or mineral growths, or volcanic excretions, or aqueous deposits, or other anomalous formations. Nicolaus Stenon of Copenhagen, naturalized as a medical professor at Padua, published a work on the Contents of Solid Rocks, in which he demonstrated the organic nature of certain Italian fossils by classing them with living Mediterranean shells, and also traced the different stages of fossilization from the empty mould to the petrified animal. Robert Hooke of the Isle of Wight, the distinguished rival of Newton, as appears from his posthumous works, not only maintained that the figured stones were real organisms or their mouldings left in rock, but also suggested that some of them had belonged to extinct species, and even characterized them as ancient medals of nature, out of which it might not be impossible to construct a chronometry of the earth. William Woodward, founder of the geological chair and museum at Cambridge, which still bear his name, early in the eighteenth century, broached the principle of stratification, by arranging the stones of Britain in horizontal layers, the like of which, he predicted, would be found on the continent and even in remote countries. The learned Professor Vallisneri, author of the first complete sketch of the Italian strata and fossils, besides refuting the grotesque cosmogonies of the Cambridge divines as to their diluvian origin, protested against the dogma of St. Jerome that the disordered state of the earth's crust exhibited the wrath of God for the sins of

man, and proposed to explain geological phenomena by natural causes without violence and without miracles. Count Marsigli, a distinguished geographical explorer, and Vitalien Donati, the celebrated naturalist, after separate dredgings, published physical histories of the Adriatic sea, in which shells, corals, and fishes, both fossil and living, were displayed in genera and species or, as the latter writer quaintly termed them, in legions, cohorts, and centuries. Lehman in the mines of Germany, Arduino among the volcanos of Italy, Demarest in the hills of France, Saussure amid the glaciers of the Alps, and Pallas upon the mountains of Siberia, together share the honor of classifying the strata according to relative age and position as primary, secondary, and tertiary, or ancient, intermediate, and recent. Baldisari and Soldani completed the organic scale of fossils from the animalcule to the mastodon, and Gesner, Brander, and Werner had already begun to arrange them in the successive strata as connected mineral, vegetable, and animal systems. William Smith, the father of English geology, a civil engineer without rank, wealth, or scientific correspondence, then completed the unknown labors of his predecessors by surveying the fossil beds of all England, and tabulating them in his work entitled "The British Strata identified by Organic Remains." Baron Cuvier, the great French naturalist and father of palæontology, at the close of the last century, having distinguished the fossil from the Indian elephant, after twenty-five years of extraordinary labor, published his great treatise on the "Organic Remains in the Vicinity of Paris," in which the most gigantic creatures, like fabled monsters of the land and sea, re-appeared in complete skeleton and form as by some magical resurrection. Adolf Brogniart, the worthy collaborator of Cuvier, in his "History of Fossil Vegetables," in like manner restored the huge flora of the ancient world, with general views of the contemporaneous climate and scenery, like glimpses of fairy land. D'Orbigny, Pictet, Von Buch, and Phillips descended still deeper through the catacombs of nature, from one extinct dynasty to another, till they reached in the metamorphosed rocks the very dust of buried worlds as remote in time as are the nebulous stars in space. At length Carl Ritter, the

founder of physical geography, in his magnificent work, "The Science of the Globe," treating the earth as a star among the stars, traced its forming continents and seas as the destined theatre of human races and civilizations. And a host of other eager explorers, such as Murchison, Dawson, Guyot, Geikie and Marsh are still at work upon the problem of its past present and future development as an organism moulded by mechanical, chemical, and vital laws.

Meanwhile, however, in the next stage of avoidance, a mere speculative geology was steadily ignoring that true biblical geology which had not yet been affected. In place of the doctrines of the creative Spirit, the six days' work and the new earth, arose various hypotheses as to the formation, the periods, and the destiny of the globe. As to its formation, there were the two rival schools of Neptunists and Vulcanists. According to the Neptunists, the crust of the earth was formed through the agency of water. It had been taught in the Church, from the time of Augustine and Tertullian, that this element prevailed at the creation as well as at the deluge. Colonna, Steno and Scilla, having accepted the traditionary cosmogony, could only regard fossils and strata as mere drift and sediment of a great inundation which had issued, it was generally believed, from subterranean fountains, formed when the sea was divided from the land and drained into a central abyss. Woodward, also, on the same theory, published a Natural History of the Earth, in which he conceived the whole terrestrial globe to have been dissolved at the flood, and the strata to have settled down as mere earthy sediment, together with the fossils, the heavier shells in stone, the lighter in chalk, according to the order of gravity. Vallisneri, however, without referring to the miraculous event of the deluge and insisting only upon natural causes of geological change, inferred from the continuous layers of rocks throughout Italy, that they must have been deposited by the gradual subsidence of a universal ocean. Werner, the founder of the great school of mines at Freyburg, carried Neptunism to an extreme by his theory, that the primitive earth had been enveloped in a chaotic fluid, precipitating successively over the whole globe the three formations of granite, slate and

clay, which he found in the little province of Saxony, and which he even fancied must have predetermined the course of civilization, according as one or the other became prominent in different regions, along the banks of the Nile, on the steppes of Tartary and amid the mountains of Switzerland. Cuvier, in his "Theory of the Earth," endeavored to explain the deposition of the strata by imagining a series of cataclysms or irruptions of the sea upon the land, produced by unknown causes, and leaving behind them successive beds of fossils as the remains of former animal kingdoms. Dr. Daubeny ascribed even the phenomena of volcanic eruptions and earthquakes to the action of water rushing underground from neighboring seas, and chemically combining with metallic masses in the caverns of the earth. Professor Agassiz, reasoning from the same element in its frozen form, as investigated by Charpentier and Guyot, has offered the ingenious conjecture, in his "Studies of Glaciers," that whole continents were once covered with sheets of ice, not the motionless torrents which Coleridge fancied he beheld in the Alps, but vast avalanches, scouring through deep gorges over distant plains, and strewing enormous boulders in their course. And extravagant as such opinions may appear, they have left a residuum of truth in abundant evidences of former revolutions effected by water, at least in the superficial strata, such as glacial drift, marine remains, alluvial soils, and, indeed, the whole mass of fossiliferous rocks, which are generally conceded to be largely composed of aqueous formations.

According to the Vulcanists, the crust of the earth was formed by the agency of fire. It had been held by some of the Greek philosophers that the world originated in that element, and the younger Pliny had referred to earthquakes and volcanoes as evidences of vast igneous forces imprisoned, like smothered embers or cavernous furnaces, in the earth. Robert Hooke, recurring to these ancient opinions in a Discourse on Earthquakes, explained by them the catastrophe of Sodom and Gomorrah, and even the Deluge itself, which he attributed to subterranean action, forming mountains into plains and plains into mountains, land into seas and seas into land, and thus exposing shells and bones upon the highest Alps

and Appenines, where, with much astonishment, we find them. James Ray followed Hooke with an essay on "Chaos and Creation," in which he ascribed to similar agencies, operating as second causes in the crust of the earth, the original emergence of the dry land and subsidence of the sea, described in Genesis. Leibnitz, however, without reconciling such speculations with the Mosaic cosmogony, declining, indeed, to press them to their consequences, published in the beginning of the eighteenth century a treatise styled "Protogea," or the Primitive Earth, in which he described our planet as an extinguished sun, having been originally an igneous globe, which had cooled and condensed through successive stages of vapor, water, and rock into its present stratified form. The great French naturalist, Buffon, incurred the censure of the Sorbonne for a similar "Theory of the Earth," according to which our world was represented as a blazing fragment of the sun, struck off by a comet, and left to whirl and cool for ages, forming its present valleys and mountains by combined aqueous and volcanic action. James Hutton, the celebrated Scotch geologist, usually called the founder of the Vulcanic or Plutonian school, in his "Theory of the Earth," characterized the globe as a rocky shell, periodically rent and fused by internal fire operating through indefinite ages. Sir Charles Lyell, in his "Manual of Geology," has employed the principles of Hutton to explain and classify certain rocks, lava, granite and slate as volcanic, plutonic and metamorphic, according as they have been erupted upon the outside of the earth, or fused and compacted within the earth, or transformed out of old aqueous deposits into new igneous compounds, the latter class including even former portions of the fossiliferous strata. Dr. Mantell also, in his "Wonders of Geology," has grouped together such volcanic ejections, granite peaks and abysmal fissures, with hot springs, new islands, water-spouts and other marine phenomena, as but connected expressions of the same terrestrial force, due alike to the reaction of the interior heat of the globe upon its exterior surface. Saussure, Daniell, Marcet, De la Rive and Reich and other thermometricians, after careful measurements in mines, springs and artesian wells, announced the general conclusion that the temperature of the

earth increases as we descend, at the rate of about one degree for every fifty feet; so rapidly, indeed, that at the centre the hardest rocks and metals would be melted in an instant. At length Humboldt, in his "Cosmos," combining these various geological data with the astronomical speculations of La Place and Herschel, has described our planet as one of the nebular rings of the primitive solar system, which has agglomerated into an incandescent sphere, and then hardened into a granite shell, to serve as the primordial base of the whole subsequent edifice of mineral and organic systems which have successively flourished and decayed upon its surface. And daring as such hypotheses may seem, they rest not only upon numerous signs of the present agency of fire in the terrestrial economy, but upon the admitted fact that the great solid masses of the planet are igneous formations.

As to the development or periods of the globe, there were also two parties,—the catastrophists and the uniformitarians. According to the catastrophists, ancient processes in the earth were rapid and violent. It had long been the faith of the Church that the world was fashioned out of chaos in six days, and afterwards totally destroyed by the Deluge in a few weeks. And some of the early geologists, proceeding upon this dogma as a scientific hypothesis, could only ascribe to aqueous and igneous causes in former times an operation almost miraculous, if not monstrous. Woodward, as we have seen, reasoning as a neptunist, had actually represented the entire crust of the globe as having been dissolved and stratified, with all its serried fossils, in the space of a few months. Hooke also, reasoning as a vulcanist, had not only endeavored to explain the phenomena of the Deluge by means of earthquakes, but also the extinction of fossil flora and fauna in the areas which they had convulsed, and even the general configuration of the globe, including a sudden upheaval of the Alps and Andes, in a few months, since which great crisis of nature their action had become languid and quiescent. Ray, Whiston, and Burnet, with other Scripture geologists, endeavored to explain the disordered strata and irregular climate of the globe by a supposed distortion of the paradisaic earth from an upright to its present oblique axis, or by the sun's rays fissuring its crust

and flooding it with the central waters in time of the Deluge, or by the successive shocks of comets, and other such planetary convulsions. Cuvier, besides ascribing the aqueous rocks to successive deluges, characterized those events as sudden and terrible catastrophes, which at ancient epochs had desolated the entire surface of the globe, and for which no adequate cause can now be found, either in the earth itself or in its astronomical changes, which were too gradual to have buried tropical animals at the poles. Sir Humphrey Davy also, in avowed opposition to the doctrine that the present is the ancient and constant order of nature, maintained that the fossiliferous strata themselves indicate a succession of destructions and creations, preparatory to the appearance of man. The distinguished geologist, Elie de Beaumont, attributed the igneous rocks, expressed in parallel mountain chains, to successive earthquakes or frightful convulsions, which after long periods of comparative repose had instantaneously burst through the sedimentary strata with protruding masses from beneath, and had probably been caused by the cooling of the heated contents of the planet, rather than by any ordinary volcanic action. Humboldt, after describing both the aqueous and igneous rocks which are now visibly forming, such as alluvium and lava, remarks that they are but a faint reflection of that more energetic activity which must have characterized the early globe, when its molten nucleus and vaporous atmosphere were in constant communication through the vast fissures which had not yet been closed by irrupted mountain ridges, nor relapsed into abysmal seas. And distant and unfamiliar as such a world must now appear, it cannot be denied that the fossils of monster plants and animals, the broken strata and distorted surface of the globe, viewed with the occasional freshet and the smouldering volcano, are very suggestive of spent forces which may once have operated with paroxysmal violence.

According to the uniformitarians, however, ancient processes in the earth were even and tranquil. It had been the teaching of Greek sages that the world from eternity, or from an indefinite antiquity, had been transformed by fire and water; and Strabo, the great geographer, had referred the

moulding of existing continents and seas to volcanoes and inundations, as still obvious causes which were of daily occurrence. But the dogma of a recent creation of strata had become so sacred to the Western mind, that it was only after centuries that any other view would be entertained even as a scientific hypothesis. Vallisneri, among the first, rejected the brief deluge of Noah as too miraculous a mode of stratification; substituting for it the sedimentary action of ordinary seas, which had slowly retired after prevailing for a long time. Lazarro Moro, rejecting the catastrophic miracles of Burnet and Whiston, endeavored to explain the original formation of continents through volcanic action; as illustrated in a new island-mountain which had recently emerged in the Mediterranean, covered with shells, fossils, lava, and gradually with vegetation. And his enthusiastic expositor, Generelli, not only argued that such phenomena may be proceeding imperceptibly on a large scale over the earth during a lapse of ages, but also insisted that they belonged to a system of waste and repair, by which the equilibrium of land and sea has been maintained from the beginning. Buffon, having described the aqueous and igneous forces which originally heaved the mountains and drained the valleys, maintained that the same causes were still active, and would gradually submerge existing continents under the ocean, and reproduce others like those we now inhabit. Raspe, known more generally as the author of "Baron Munchausen's Travels," published a work on the "New Islands Born of the Sea," in which he not only ascribed the production of continents to existing causes, but suggested their indefinite duration, the secular changes of climate and species, and other problems of modern geology. Professor James Hutton, the founder of the uniformitarian school, boldly declaring that in the economy of the world he could find no traces of a beginning and no prospect of an end, enunciated the principle of a gradual decay and metamorphosis of rocks, which he described as the ruins of former worlds successively disintegrated and reproduced by known chemical agencies still observable in the deposit of alluvium and the formation of lava. Geoffrey St. Hilaire, Lamarck, and other naturalists, as we shall see, broached the

cognate principle of a gradual extinction and generation of animal species by transmutation of one into another, rather than by successive catastrophes from which none could escape. Babbage, in view of the co-action of climatic and organic forces, referred the tropical flora and fauna of the primitive earth to the excessive radiation of its internal heat, which in former epochs had converted it into a vast hot-house, but with the lapse of ages had been checked by the continued formation of a non-conducting crust of interior lava and exterior sediment. Sir John Herschel was so persuaded that geological revolutions are regular and not convulsive, that he sought to explain the difference between ancient and modern climates, which geology clearly indicates, by astronomical causes acting imperceptibly through myriads of centuries, such as the gradual alteration of the earth's orbit and exposure, and even a possible fluctuation of heat and light in the sun itself, after the manner of the variable stars. At length Sir Charles Lyell, in his masterly work on the "Principles of Geology," bringing together all these varied phenomena under one wide induction, has referred them to existing terrestrial causes, both internal and external, which, by slowly shifting the continents from one part of the globe to another, have successively produced and fossilized the various floras and faunas that have flourished and decayed over the earth through indefinite time. And if it be held that such apparent catastrophes as floods and earthquakes are but incidental, like the occasional fall of a ruined tower, or even normal, (what Raspe termed Nature in the act of parturition), we shall certainly find much in the regular succession of the ancient strata and fossils, viewed in connection with existing climates and species and the known rate of their action, which might suggest a steady play of forces ever operating with uniform tranquillity.

As to the destiny of the globe, there have also been two corresponding opinions. Many of the early geologists predicted the dissolution of the earth. It had, in fact, long been a sacred tradition, both pagan and Christian, that the world was to be consumed by fire, as it had once been submerged with water. Plato, in his Phædon, had discoursed sagely concerning the Pyrophlegethon, or infernal lake of fire which

was supposed to girdle the earth and at times overflow it with lava streams from Ætna and Vesuvius; and Pliny had been so impressed by its combustible materials, that he had declared it the greatest of miracles that a day could pass without a general conflagration. Hooke and Ray, with the English geologists of their time, reasoning from the prophecies as postulates, and from the examples of Sodom and Gomorrah, speculated upon the destructive agency of earthquakes and volcanoes in bringing about a universal catastrophe, of which the buried ruins of Herculaneum and Pompeii and the prostrate cities of Spain and Chili were but the premonitions, and which might finally inflame the heavens as well as the earth. Leibnitz, as a mere scientific cosmogonist, retained from his primitive globe of fire a volcanic nucleus, ever and anon agitating its rocky shell with subterranean tremors and bursting forth in floods of lava. John Mitchell published, in 1760, an essay on the "Causes of Earthquakes," in which he seems to have revived the picturesque theory of Ovid concerning the inflated cone of Methone, by referring the wave-like motion of the ground to imprisoned air forcing itself along, as in the folds of a carpet, between the solid strata and the fluid lava upon which large districts were supposed to float. And more recently, Professor Rogers of Philadelphia has attributed such terrific land-tides to actual pulsations of the molten matter itself, under enormous tension, exploding in volcanic gases or escaping into the cavernous spaces beneath. Cordier, Fourier and Humboldt, on the basis of their thermometrical researches, described our planet as a liquid ball of glowing metals and lava, steadily cooling and shrinking within a solid crust relatively no thicker than an egg-shell. Sir Humphrey Davy, in a memoir on volcanoes, threw out a suggestion, based upon his chemical discoveries, that the rapid combustion of the primitive globe formed an oxidized crust, within which remained compacted various inflammable metals, needing only contact with the hydrogen afforded by neighboring springs, in order to fuse the surrounding rocks into such a substance as lava; and Dr. Daubeny, pursuing this conjecture, has argued from the weight of the globe and the prevalence of volcanoes in its maritime regions, that its vast metallic

contents are but like smothered fuel, ever kindling afresh and exploding in jets of mud and fire. Other and still bolder theorists, leaving the earth, have fancied atmospheric and astronomic agents of combustion, such as the electric storm, the meteoric shower, increasing solar heat and even stellar radiation throughout the celestial spaces, exceeding in some regions the glare of a tropical sun. And if both classes of igneous influences be combined in our fancy—those which gleam around the planet in the blazing comet and the hurtling thunderbolt, with those which burst from within it, flaming in its thousands of volcanoes and shaking its populous cities into ruins—we shall be at no loss for instruments as well as presages of a general disaster.

Most later geologists, however, have maintained the stability of the earth. The repeated failures following attempts to fix the date of its predicted dissolution at length converted a religious foreboding into scientific skepticism, at first expressed in vagaries wilder than the fabled descent into Avernus. In place of the central fires and combustible contents of the globe, was imagined a hollow sphere, distended by expansive forces, lighted by the two subterranean planets, Pluto and Proserpine, and even peopled with imaginary plants and animals. The celebrated Halley published a paper in the Philosophical Transactions on the "Structure of the Internal Parts of the Earth and the concave habited Arch of the Shell," in which he gravely explained the phenomena of terrestrial magnetism by a huge metallic nucleus rotating in the interior of the globe. Holberg, a Norwegian dramatist, embodied a quaint satire upon the inhabitants of the upper earth in a scientific romance respecting the physical scenery, people, and institutions which had been discovered on a journey into the nether world. The more notorious Captain Symmes repeatedly invited Sir Humphrey Davy and Baron Humboldt to undertake a subterranean expedition to the interior regions through a cavernous opening, which he maintained would be found near the North Pole.

And such pleasantries, in the progress of science, were seconded by more exact hypotheses as to the decline or absence of infernal fires. Buffon, indeed, in advance of

modern researches, consistently with his view of the earth as a dying ember of the sun, had already anticipated, from its gradual refrigeration, a reign of perpetual winter rather than its dissolution in flames. And recent physicists, according to Professor Winchell, have conjectured that the diurnal rotation due to primordial heat will gradually be overcome by the lunar tides, the day waning more slowly as the cooling earth spins more feebly, until at length, like the moon, it shall flutter upon its axis as a dead world, with the same pallid face ever turned to the sun. Fourier, though he conceived the central mass to be twelve times hotter than molten iron, had so little fear of any igneous catastrophe, that he computed its radiation at the slow rate of about a three-thousandth part of a second in a century, only sufficient to melt a layer of ice ten feet thick in that time. M. Pouillet ingeniously estimated that the quantity of heat derived annually from the central earth is not one-fortieth of that received from the sun, which alone would melt a stratum of ice around the globe nearly fifty feet thick in a single year. Mrs. Somerville has remarked that the conditions of vegetable and animal life are so entirely due to the solar rays that it is of very little consequence whether the centre of the globe be liquid fire or ice, the interior heat not being sufficient to melt the snow at the poles. Sir William Thompson and Mr. Hopkins have at length wholly discarded the notion of any existing interior fire; maintaining that if the globe was originally in a melted state it must have cooled and hardened from the centre, and that its rigidity and general solidity can be mathematically proved from the observed rate of solar and lunar attraction. It is indeed held by some eminent geologists that La Place long ago afforded a full refutation of the theory of central fluidity by demonstrating that since the time of Hipparchus, in two thousand years, the mean day has not shortened by the three-hundredth part of a second, as would have been the case, had the earth been a cooling and shrinking globe, rotating with increasing velocity. And to these considerations have been added others in favor of a sort of thermal equilibrium of the planet, in both its internal and external relations. Sir John Herschel and Mr. Babbage, on the

hypothesis of an interior stratum of lava, ascribed earthquakes and volcanos to the unequal pressure of the crust upon the fluid mass, and regarded them as vents and safety-valves, serving to equalize the interior temperature of the earth and maintain the general tranquillity of its surface. Sir Charles Lyell not only contended that the supposed fiery nucleus of the earth could not exist a moment without melting its crust in the effort for uniform temperature, but also argued that volcanoes and earthquakes are really conservative rather than destructive agencies, proceeding from internal chemical action, and tending to preserve the balance of land over the globe, and thus sustain the successive climates and species which follow its shifting continents. The younger Herschel, besides referring terrestrial climate to celestial causes alone, held its secular changes to be periodic and sálutary rather than cumulative and disastrous, ranging between excessive summer and winter, through unknown epochs, according as the decreasing or increasing eccentricity of the earth's orbit yields a greater or less amount of solar heat. Adhémar, Croll and Drayson, combining such astronomical data with the evidences of ancient tropical vegetation at the poles, have calculated that our planet, as it sways and nods toward the sun, has its northern and southern hemispheres alternately crowned with verdure or capped with snow, about every other twelve thousand years. And if to these periodic fluctuations of temperature within the solar system be added those which may prevail beyond it in the stellar regions, as suggested by the elder Herschel and Poisson, we can imagine the earth, while it follows the sun among the stars on his journey of eighteen million years, undergoing climatic revolutions quite adequate to clothe it either with ice or with fire, passing indeed through a sort of sidereal winter and summer, amid which our whole historic epoch, with all its swelling annals and teeming arts and splendid works, shall seem transient as the hues of morn or the flowers of spring.

The third and ultimate stage of perfect indifference, already reached in our day, is that of repudiating the whole biblical geology as no longer of any scientific worth or relevance. It was not strange that some of the early geologists who were

of a devout temper, such as Leibnitz and Hooke, should be reluctant to press theories which were plainly inconsistent with received interpretations of Genesis, or that others of them, who were simply animated with scientific zeal, such as Vallisneri and Hutton, should insist upon a fair field for their investigations, by excluding manufactured miracles and catastrophes, and referring all terrestrial phenomena, as far as possible, to known natural laws and causes now existing, without raising speculative questions as to the origin and destiny of the globe. But there remains another class, of very different spirit, who deny that the revealed cosmogony is even logically or philosophically essential to a complete theory of the earth, and have banished it from their speculations, only themselves to illustrate anew the mundane egg in the comedy of Aristophanes. Baron Humboldt, whilst congratulating geologists that their science, on the continent at least, has been emancipated from Semitic influences, nevertheless himself essayed the problem of the world-upholding tortoise by proposing to poise a liquid globe of fire in a thin shell of granite, too impossible, as Lyell argues, to have existed even for an instant. Sir Charles Lyell himself, who always treats the Scriptures with respect, indicates his sense of their scientific value by studiously excluding them from his "Principles of Geology," even from his learned chapter on oriental cosmogony, whilst the sacred books of the Hindoos are discussed and commended as of peculiar interest to the geologist, as well as full of sublime conceptions of the Deity. "But you are not therefore to think," says the Lysicles of Berkeley, "that Alciphron pays any more real regard to the authority of such apocryphal writers, or believes one syllable of the Chinese, Babylonian, or Egyptian traditions. If he seem to give them a preference before the Bible, it is only because they are not established by law." Professor Max Müller, with the extreme of scientific candor, remarks in his "Chips from a German Workshop," that he would hail with equal pleasure any solid facts by which to establish the dependence of Genesis on the Zend Avesta, or the dependence of the Zend-Avesta on Genesis. Professor Huxley, in an essay on "Geological Reform," so far from admitting with Lyell that the origin and destiny of the

globe are questions to be settled only by the Infinite Mind, maintains that we are as competent to trace the genesis of a world as the growth of a fowl within the egg. And Mr. Herbert Spencer, throwing off all reserve, after having shown how the embryo earth was formed according to the nebular hypothesis out of a fiery nucleus into its present shape and condition, declares that if one of our leading geologists were asked whether he believes in the Biblical Genesis, he would take the question as next to an insult.

On the revealed side of the same science, however, there have been corresponding departures from the rational theory of the earth. The first stage was that of expelling the false scientific geology which had been foisted into the Scriptures. It was a time to vindicate them from erroneous hypotheses, which claimed its authority, and a few divines were found bold enough to lead the way to a more scientific interpretation. As early as the ninth century, St. Virgilius asserted the true figure of the earth against the rectangular geography of the fathers. In spite of the charge of diabolical magic, great scholastic divines, like Roger Bacon, Albert of Bollstadt, and St. Vincent of Beauvais, became the pioneers in physical geography, natural history, and other geological sciences, which are now associated only with secular names. Cardinal Alliacus, early in the fifteenth century, published a geographical "Picture of the World," which was the text-book of Columbus in his studies and voyages, and is cited by Humboldt as the chief authority of the time. Cardinal Quirini in the next century, speculating upon the fossil shells of inland regions, at a time when all the theologians of Europe were persuaded of their diluvian origin, endeavored to refer them to purely natural causes, and ventured for the first time to question the universal prevalence of the flood. Dr. John Keil, the vindicator of Newton at Edinburgh and Oxford, published an Examination of the Scripture cosmogonies of Burnet, Warren, and Whiston, assailing with caustic wit their pedantic treatment of the deluge, which he insisted should be regarded only as a moral event or supernatural judgment, and not as an ordinary freshet drowning a few country people. The learned Carmelitan friar, Cirillo Generelli, before the academy of Cremona, elo-

quently denounced the same school of divines, as capriciously calling the Deity upon the stage to confirm their preconceived hypotheses, and building systems in the air which cannot be propped up without a miracle. Bishop Herbert Croft, in his "Animadversions" upon Burnet's theory, repudiated it as a mere ingenious romance, tending to the discredit of the Scriptures as well as of true science; whilst the Puritan naturalist, Ray, stigmatized the Woodwardian hypothesis as an attempt to adjust scientific phenomena to theological prejudice. Bishop Stillingfleet, whose Origines Sacræ appeared in the midst of the controversy, saw no urgent necessity from the Scripture to assert the universality of the deluge as to the globe of the earth, unless it could be proved that the whole earth was peopled before the flood. Matthew Poole, also, the great non-conformist divine, in his "Synopsis of Critical Writers" on Genesis, argued that to confine the deluge to the habitable world, besides being all that its moral design required, would effectually silence those irreligious persons who cavil at the truth of the sacred narrative. Bishop Clayton of Killala, in his learned "Vindication of the Old Testament History," broached, on physical as well as scriptural grounds, that theory of a partial deluge now so generally received, but then opposed as a deadly heresy. The Rev. John Michell, from the very chair of Woodward, began to issue geological essays, in which the pious speculations of his predecessor were avoided with scientific rigor. Bishop Berkeley, among other sagacious remarks in his "Alciphron," inferred the comparatively recent origin of man from the lack of civil or historic remains among the shells and stones buried underground many thousand years ago, and argued a beginning of the world from such natural causes as the decrease of fluids, the sinking of hills, and the diminution of planetary motions. At length Dr. Chalmers, as if to close the long fruitless defence of an untenable position, declared from a chair of St. Andrew's, in the city of Hutton, that the Mosaic writings do not fix the antiquity of the globe. And from this time repeated attempts have been made by such scientific divines as Pye Smith, Fleming, and Hitchcock, to reconstruct the whole scripture doctrine of the earth as the appointed abode of man.

Meanwhile, in the next stage of indifference, various dogmas still remained not yet adjusted to the new scientific geology. Whilst the votaries of that science were investigating the physical formation, development and destiny of the globe, theologians adhered to traditional teachings concerning the primitive chaos, the six days' work, and the predicted new earth. As to the primitive chaos out of which the earth was formed by the Divine Spirit, religious writers had long been agreed. The idea of an original mass or void was so prominent in all ancient cosmogonies, both pagan and Christian, as to have suggested a common revelation for its source. The Hindoos had been taught in the Songs of the Vedas and the Institutes of Menu, that the first sole Cause with a thought created the waters and then moved upon them in the form of Brahma, the creative agent, until the shapeless ocean was distributed into land and sea and sky. The Egyptians believed, as Orpheus sang to the Greeks, according to Aristophanes, that the sable-plumaged Night having been embraced by Love, resplendent with golden pinions, conceived the world as a chaotic egg, and by brooding upon it developed it in its organized form. The Persian fire-worshippers, as reformed by Zoroaster and represented by Manichæus, held that from the Eternal Being, through his creative Word Honofer, had proceeded the two principles of light and darkness, good and evil, termed Ormuzd and Ahriman, by whose antagonistic efforts the contrasts of the universe were produced. Many of the philosophizing Jews and Christian gnostics maintained a similar dualism of God and the world, spirit and matter, the former fashioning the latter from a crude into an organized state, in spite of Satanic opposition. Some of the early Church fathers, such as Chrysostom, Basil and Ambrose, in their homilies upon Genesis, taught with more or less distinctness that the earth was first created a rude and shapeless mass, without form or ornament, and that it was only after an unknown period of darkness that light was made and the six days' work proceeded. The schoolmen distinctly held the doctrine of an original chaos, carefully distinguishing between a primary immediate creation of matter in the beginning, by which the simple substances or elements originated, and a

secondary mediate creation of forms, during the six days, by which the elements were disposed and combined as organized products. Thus the Venerable Bede, in a work on the Hexæmeron, taught that before any day God made the angelic nature and formless matter, the six days then following, as narrated in Genesis. Hugh of St. Victor held that light was created not out of nothing, but out of pre-existing shapeless matter, in order to prefigure to rational beings the transformation from moral deformity into beauty, and that the separation of light and darkness involved a corresponding separation of good and evil angels. At length Peter Lombard, in his Sentences, expressed it as the orthodox teaching that in the beginning God created the heavens (that is, the angels) and the earth (that is the confused, shapeless material of the four elements, called chaos by the Greeks) and that thereafter the elements were distinguished and assigned to different objects, according to their species. Protestant divines also, such as Calvin, Peter Martyr, Hollazius and Quenstedt, maintained that, while the angels, the soul of Adam and the elements were created of nothing, all other organized beings were gradually produced from a rude and indigested mass or chaos, upon which the creative Spirit moved or brooded with vivifying and organizing power. Some mystical divines went so far as to admit the agency of the devil in thwarting or marring the creative process, which they represented as itself a degradation from the infinite into the finite, while chaos was a still farther degeneration, resulting from the fall of the angels. As yet, however, few if any attempts could be made to connect these various dogmas with physical researches into the supposed nebular origin of the globe; and the aqueous and igneous phenomena, since claimed by the Neptunists and Plutonists, such as inundations and volcanoes, were simply viewed as special divine judgments, or referred to the primal curse upon the earth for man's sake.

As to the hexæmeron or six creative days, various opinions had been handed down from the primitive revelation. The eastern cosmogonies had generally proceeded upon the conception of a creation accomplished in successive periods. Brahma, the creative deity of the Hindoos, had been repre-

sented as alternately vivifying and destroying the world by waking and sleeping at the dawn and night of each long day of his existence, through many thousand kalpas or ages. Zoroaster had taught the Persians that God created the world not in six natural days, but in six times of different length, together amounting to three hundred and sixty-five days or full years, with a succession of works substantially similar to those described by Moses. The Etrurians also held the same order of creation, but allotted six thousand years to the process, each thousand years constituting a day. According to the Jewish Cabbala, the world was created in six days, which respectively prefigure the six thousand years of its history, the seventh millennium to follow as a great Sabbath or era of universal peace. Philo the Jew, in his Sacred Allegories, declared that only rustic simplicity could imagine the world to have been created in six days, or in any definite time, when the perfect number seven, the Sabbatical period, was all that was intended by the septenary division of the week of the creation. And the majority of the Christian fathers, with some of the schoolmen, regarded the creative days as mere timeless acts or works of God, figuratively represented as successive mornings and evenings. Origen, in his Reply to Celsus, utterly repudiated the external sense of Scripture as to the six days consumed in creation, and maintained that the world was produced in a single moment; exclaiming, What sane mind can think that the first, second and third day, with morning and evening, could have occurred without sun, moon and stars! Athanasius, too, in his "Sermons against the Arians," asserted that no one thing was made before another, but all things were produced together by one and the same mandate. Augustine, unequivocally adopted the sentiment of Ecclesiasticus, "He that liveth forever created all things at once," and argued from the text of Genesis that the first three days could not have been measured by the rising and setting of the sun, before the appearance of that luminary, and that the six creative acts were not successive in fact, but only in our thought, and so represented merely in accommodation to our earthly conception of work-days, which begin and end with morning and evening. And the same general view was

accepted by Aquinas and Albert. Other scholastics and most Protestant divines, however, were inclined to the literal sense of days of twenty-four hours. Hugh of St. Victor, combining the literal with an allegorical interpretation, held that the Almighty might have created the world differently, even in a moment of time, but chose to form it out of chaos in six days, in order to convey moral instruction to His intelligent creatures in successive lessons. Peter Lombard, digesting the Church authorities on the question, in his Book of Sentences, inferred that God formed the elements into distinct orders of beings not at once, as some of the holy fathers taught, but as it appeared to others, through intervals of time, even six diurnal revolutions. Calvin also repudiated the traditionary teaching, that the world was created in a moment, and argued that six days were employed in its formation, not that God had need of this succession, but that He might engage us in the consideration of His works, and render them perspicuous and intelligible as matter of devout contemplation. Turrettin defended the same opinion as required by the obvious sense of Genesis, especially the reason annexed to the fourth commandment, "For in six days the Lord made heaven and earth and all that in them is"; though he also argued that the whole work of each day was produced by an instantaneous fiat, plants and animals in a mature state, and, therefore, in the autumn of the year, and not in the season of spring, as some of the fathers had fancied. Archbishop Usher, whose "Annals" afforded the chronology of our English Bible, fixed the date of the creation of the world on the 25th of October, 4004 B. C.; and the painstaking Baptist commentator, Dr. Gill, counted the successive days of the creative week from that epoch as carefully as if he were calculating an almanac. Geologists, it will be remembered, had not begun to claim for the successive strata, floras and faunas, those indefinite intervals of duration which would have suggested that the six days before the Sabbath may have been but confused formative eras, followed by the present human epoch of order and tranquillity.

As to the future new earth, predictions had appeared in nearly all the sacred writings of antiquity. From the earliest

time, in all nations, occasional destructions and renovations of the earth had been associated with a degeneracy and regeneration of mankind, as divine judgments and blessings, and had been referred to the alternate agency of water and fire the two most powerful and familiar causes of disaster. Plato tells us, in the Timæus, that the Egyptians believed that deluges and conflagrations were employed by the gods to arrest the extreme debasement of mortals and renew the earth for another golden age. In the Sibylline books, this predicted golden age of the earth is depicted, according to Virgil, almost in the language of Isaiah, as a time when the kid shall no longer fear the lion, the serpent and noxious herb be destroyed, and clusters of grapes hang upon the bramble. The Stoics, in describing the same scene, employed the very epithets of St. Peter and St. Paul, such as restitution, palingenesia and resurrection, and referred to the purifying agency of fire, as inculcated in the Orphic Hymns. The Arabians had their fable of the Phœnix, according to which the earth, after having been burned up, would rise out of the ashes with renewed vigor and beauty. The doctrine of a renovation of the earth by a general conflagration, was also common among the Jews in our Saviour's time, and as enunciated by the apostles was adopted by the fathers, and at length matured by the schoolmen into the dogmas of purgatory and the final judgment, with a blending of pagan and Christian traditions, as may be found expressed in the first verse of the Dies Iræ, anticipating the dissolution of the world in flames on the authority of both David and the Sibyl. Protestant theologians also, with the exception of those who interpreted the prophecies figuratively, looked forward through the fires of the last day to a resurgent earth, adorned and purified as the abode of the righteous, the realm of Messiah, and mayhap the scene of heaven itself. But as yet such opinions were based upon the Scriptures exclusively, as part of a dogmatic system, without any physical reference to the central fires of the earth or its supposed catastrophic or climatic revolutions in the astronomical heavens.

At length, in our century, we have reached that last stage of open rupture, in which the whole scientific geology is re-

jected as without Scriptural warrant or interest. It was not surprising that judicious divines, such as Generelli and Stillingfleet, should have hesitated to incorporate with Genesis the grotesque hypotheses which marked the credulous infancy of the science, or that others should have insisted upon the grammatical and dogmatic sense, against the many pretended scientific interpretations which were merely of a speculative nature. But a class has since arisen, of less genial spirit, who would exclude the true geology, as well as the false, from the Scriptures and retain a doctrine of the earth avowedly at variance with its known physical development and structure. Dr. Chalmers himself, assuming that Genesis was not a complete history of creation, suggested that many irrelevant geological chapters might have been omitted between the first and second verses, in consistency with its general design as a revelation to the Jewish and Christian world. Dean Buckland, in his Bridgewater Treatise, on the same theory of partial reserve, trenchantly asks of those persons who consider physical science a fit subject of revelation, what point they can imagine short of a communication of Omniscience, at which such a revelation might have stopped without imperfections of omission, whether at the epoch of Ptolemy or Copernicus or Newton. Archbishop Sumner, in his "Records of Creation," maintains that the expressions of Moses are evidently accommodated to the first and familiar appearances derived from the sensible phenomena of the earth and heavens. Archdeacon Pratt of Calcutta, in his "Scripture and Science not at Variance," though holding himself ready for a scientific explanation should it come, somewhat incautiously prejudges that Scripture was not designed to teach us natural philosophy, and that it is in vain to attempt to make a cosmogony out of its statements. The Rev. W. D. Conybeare, in his "Geology of England and Wales," having boldly premised the principle, that we should first determine what ought reasonably to be expected in Genesis, announced that the connection of geology will be with natural rather than revealed religion. For such reasons the Edinburgh Review, noticing the Mosaic cosmogonies of the day, expressed it as a general opinion, that it would be better to leave altogether untouched the connec-

tion of geology with the sacred narrative. And learned divines and commentators, such as Knapp, Gerlach and Keil, living amid the grand geological discoveries of Cuvier, Lyell and Von Buch, have descanted upon the six days in which God made heaven and earth and all that in them is, as if they were mere dramatic pictures or magical fiats, distributed literally through the working hours of a week, and designed mainly to enforce the proper observance of the Sabbath.

And thus geology, the science which embraces the origin and destiny of the globe we inhabit, if governed by the indifferent spirit, instead of retracing the Creator through all His works, would be remanded either toward the Jewish cabbala and the Patristic allegories, or toward the heathen cosmogonies of the Hindoo and the Greek.

The Schism in Anthropology.

In anthropology a similar truce has already been proclaimed, and is fast growing into a like rupture.

On the rational side of the science there has been the same gradual divergence from the revealed doctrine of mankind. In the first and legitimate stage of separation came the decline of the false biblical anthropology of the schools. It was the time when the scholastic definitions of man were being tested by the demonstrations of the scalpel, and great naturalists were loyally tracing the steps to his throne in the kingdom of nature. Early in the fourteenth century, Mondino of Bologna, the father of modern anatomy, whose treatise on the internal organs became the text-book in the schools of Italy for two centuries, had restored and improved the system of Galen by means of human dissections, at a time when they were forbidden as sacrilege with Moslem rigor. Leonardo da Vinci, the universal genius of the fifteenth century, scarcely less accomplished in science than in art, for the mere uses of painting and sculpture, had delineated the exterior muscles, with an intuitive accuracy which Hunter pronounced unsurpassed in that age, and Sir Charles Bell has since but confirmed as the true anatomy of expression. Berenger of Carpi, advancing beyond Galen and Mondino, had demonstrated the system

of the internal tissues, by dissecting and comparing apes and men, with a boldness which at length led to his banishment. Achillini, Eustachius, and Fallopius, by the discoveries still associated with their names, had illustrated the same golden age of Italian Medicine, whilst the rest of Christendom were stigmatizing such researches as mere profane temerity. Andrew Vesalius of Brussels, usually styled the founder of human anatomy, who for its sake braved the terrors of the plague, the gibbet, the charnel house, exile, shipwreck, and a forgotten grave, at length appeared, to complete the labors of his predecessors in his great work on the Structure of the Human Body, exhibiting for the first time a full view of all its organs and textures, with the aid of the magic pencil of Titian. Servetus, Levasseur, and Cæsalpin threw out conjectures which it is the glory of Harvey to have confirmed, by demonstrating the circulation of the blood

And at the same time, in other connected fields of living nature, Gesner of Germany, Aldrovandus of Italy, and Ray of England, building their ponderous tomes, one above another, upon the natural history of Pliny, slowly erected the countless genera and species of plants, insects, birds, and beasts, in lucid order, toward the genus Man, at the summit of the animal scale. Linnæus, the great Swedish naturalist, soon placed him upon that pedestal, in his "System of Nature," by proposing him as a legitimate subject of comparative zoölogy, to be classed anatomically next above the apes, in the sovereign order of primates, as the head of the mammalia. Buffon, Blumenbach, and Cuvier followed in the steps of Linnæus, and led the way for Laurence, Morton, Agassiz, by still further distinguishing him as chief of the vertebrates, erect, two-handed, with large frontal brain, speech and reason; and distributed his species according to climate and color, into varieties such as the white, yellow and black races of Europe, Asia and Africa.

In the next ascending science, Adelung, fulfilling the prophetic genius of Gesner and Leibnitz, the forerunners of comparative philology, afforded the first means of studying affinities of speech as well as of race, by publishing the "Mithridates," or general science of languages, containing the

Lord's Prayer, in five hundred dialects, systematically arranged. Vater carried forward the unfinished work of Adelung. Prichard, with prodigious research and learning, combined the study of languages with that of nations, in his Natural History of Mankind. Frederick Schlegel, in his Essay on the Language of the Hindoos, sketched with philosophical genius that historical connection of the Indian and European tongues, which Sir William Jones had already surmised. Francis Bopp, by his "Comparative Grammar" of the same dialects, demonstrated their original identity of structure. And William Humboldt, Latham, and Bunsen, penetrating to the philosophy as well as history of all human speech, began to reduce it to classes and kindreds, such as the monosyllabic, agglutinate and amalgamate; the Hamitic, Shemitic, and Japhetic; the African, Turanian, and Aryan.

Archæology, too, on a still higher plane of research, joined the study of human races and tongues with that of ancient arts, as Champollion and Lepsius in Egypt, Layard and Robinson in Syria, Stevens and Pickering in America, Moffat and Livingstone in Africa, and Nillson in Europe collected the first materials for tracing the lost epochs and stages of primitive civilization, such as the ages of iron, of bronze, and of stone. At length archæo-geology, the science which crowns all the other anthropological studies with that of animal and human remains, has ventured still further backward through the past organic epochs of the globe in the steps of Frere, Christol, and Schmerling, among the extinct climates, floras, and faunas co-eval with pre-historic man, in the times of the glacier, the pine, the gigantic reindeer, and the lake-village. And thus the whole field has been cleared for such living anatomists as Gratiolet, Leidy, and Owen; such linguists as Max Müller and Whitney; such antiquarians as Rawlinson and Schlieman and such palæontologists as Pictet, Cope and Marsh, to attack from all points the complex problem of man, viewed as a crowning product of the terrestrial system moulded by organic and climatic laws.

But meanwhile, in the next more marked stage of separation, had been growing up a mere speculative anthropology in place of that true biblical anthropology which still endured.

For the Scripture doctrines of the fall of man and the first and second Adam, were gradually substituted various physical hypotheses concerning the origin, the unity and the destiny of the human race. As to the first of these questions, there were two rival hypotheses. The one was that of a transmutation or development of species. It had been a conceit of the Greeks and Romans, as expressed by Horace in his Satires, that when the animals first crept forth from the newly-formed earth, a dumb and filthy herd, they fought for acorns and hiding-places with their nails and fists, then with cudgels, and finally with arms, as experience taught them; they next invented names for things and words to express their thoughts; and at length began to abstain from war, to fortify their towns, and to enact laws. But as the Christian mind of western Europe became imbued with the doctrine of the fall of man from Paradise, this classic myth of his animal origin disappeared; and it was only after a long course of rigorous speculation and by successive conquests over religious prejudice and physical antipathy, that the pleasantry of the satirist has become a grave question of science, and even such a familiar topic of literature, that Mr. Hallam does not hesitate to affirm that "the framework of the body of him who has weighed the stars and made the lightning his slave, approaches to that of a speechless brute who wanders in the forests of Sumatra." De Maillet, the French consul at Cairo, early in the last century, veiling his name under the anagram of Telliamed, and his ironical purpose in a "Dialogue between a Christian Missionary and a Heathen Sage," may be said to have led the way to this speculation, by describing the primitive animals as emerging from the slime of the deluge and becoming gradually, through successive generations, adapted in their organization to the slowly desiccated earth. James Burnet, better known as the eccentric Lord Monboddo, near the middle of the last century, in his learned work on the Origin and Progress of Languages, had entertained the wits of Edinburgh and provoked the broad sallies of Samuel Johnson, with his grim conceit of a primitive nation of monkeys, or long-tailed men, who had lost the caudal appendage as they invented speech, clothing, and the other appliances of civilization. Lamarck, one of the

greatest of the French naturalists, at the close of the century, followed with his Philosophical Zoölogy, in which, with much more knowledge and acuteness, he broached the imposing theory of a gradual transmutation of one species into another through the whole organic scale, from the mollusk up to the monkey, and from the monkey up to man, by means of their instinctive efforts to adjust themselves to new circumstances; as the turtle, forced to live on land, at length emerged a tortoise; as the cow, browsing upon high limbs, grew into the camelopard; as the wild goat, by a life of flight and terror, was changed to the gazelle; and as the ourang, driven from the trees to the ground, became erect, dexterous, articulate, ambitious, and at last civilized man. Geoffrey St. Hilaire, for thirty years afterwards, in the Academy of Sciences, stood forth as the champion of the same extraordinary hypothesis, until it was silenced by the great name of Cuvier, who cited the embalmed animals and men of ancient Egypt as witnesses that their species had not changed for thirty centuries. The author of the "Vestiges of Creation" recalled the opinion from obscurity mainly to show its defects and surmise the existence in the divine mind of some higher law of organic progression than the mere blind wants and efforts of animals themselves. And Professor Richard Owen, the great comparative anatomist, many years ago surmised the probable action of a physical law by which nature has advanced, with slow and stately steps, through the archetypal light, from the earliest vertebrate in the fish to the glorious form of man.

At length Mr. Alfred Wallace, in his work on "Natural Selection," has proposed such a law, in accordance with which it is held that nature, or the God of Nature, ever selects the best breeds among competing races, or the fittest to survive in given circumstances; the tortoise remaining long after the stranded shell; the antelope distancing the kid in the race for life, and the giraffe feeding aloft where the flocks can no longer graze. Dr. Hooker, about the same time, in an Essay on the Flora of Australia, admitted the operation of a similar law of continuous variation of species throughout the whole vegetable kingdom during indefinite periods, until the beech has supplanted the oak and the pine, and the garden rose has

bloomed out of the wild thorn. Mr. Charles Darwin, who shares the honor of the theory with Wallace and Hooker, in a simultaneous treatise on the "Origin of Species or the Preservation of Favored Races in the Struggle of Life," soon applied it to the human species in his work on the "Descent of Man," arguing from his embryonic stages and rudimental organs, that he must have originated in a hairy quadruped of the Old World, furnished with pointed ears and a long tail, and probably arboreal in its habits; and more recently has published an essay on the "Expression of Animals," designed to trace the legacies of their instinct and passion in the human physiognomy. Professor Huxley also, in his "Evidence as to Man's Place in Nature," after having shown that with respect to the hand, the foot, the brain and all other anatomical characters, man differs less from the gorilla than the gorilla from the monkey, insisted that his origin must be sought in physical causes alone, and suggested his probable derivation from a man-like ape, on the principle that the highest faculties of feeling and intellect begin to germinate in the lower forms of life, as in the dog, the cat, and the parrot. Dr. Shaafhausen of Bonn had already, in several memoirs, argued that the development of the human mind from a state of animal rudeness would be no more incredible than the growth of a chicken from the egg, and had agreed with Huxley, in citing the famous Neanderthal skull, with its low brow and small cranium, as evidence that primitive man was more ape-like and bestial than any extant tribe of savages. Professor Hæckel of Germany, with still greater boldness, in his work on the "Origin and Genealogy of the Human Race," assuming that from the womb to the grave man recapitulates all animal forms, has declared that certain rudimentary bones and muscles at the base of the vertebral column, afford incontrovertible proof of his descent from a tailed ancestor, to which he gives the zoölogical name of Pithecanthropos, or the primitive ape-man, a woolly-haired, long-headed being, of blackish color, but destitute as yet of speech, the essentially human characteristic.

Even articulate language itself, according to some late philologists of the school, is but an animal faculty of expression, which has been developed in man through enormous pe-

riods, relics and evidences of which may still be found in fossil dialects and rudimentary letters. Professor Schleicher, in treating of the Significance of Language in the Natural History of Man, has referred it to the animal stage of his development as a capacity increasing, through successive generations, with the growth of the brain and vocal organs, except in some speechless beings, such as the anthropoid apes, who have been arrested in the process of becoming human and remained stationary. Dr. Gustav Yager, as a zoölogist, has argued that speech was discovered long before there were any men, in the pairing-call of birds and gesture-language of monkeys, who gradually added sounds and words with their growing stock of ideas, or lapsed, like deaf mutes, into a voiceless and unprogressive condition. Clemence Royer declares that all language, having originated in mere animal cries and imitative sounds, in becoming humanized has but passed, by insensible transitions, from the chatter of scolding apes to the comedies of Shakspere and Molière.

In like manner, a large body of distinguished archæologists are endeavoring to trace a genetic connection between the rude arts of this half-animal savage of the past and the whole existing civilization. Boucher de Perthes, author of a treatise on Antediluvian Man and the discoverer of the celebrated flint axes in the valley of the Somme, instead of disdaining the study of implements so simple that their human design has been doubted, declared that the first man who struck one pebble against another to give it more regular form, gave the first blow of the chisel which produced the Minerva and all the marbles of the Parthenon. Louis Figuier, though he repudiates the animal origin of the species, has published an ingenious treatise on Primitive Man, in which he depicts the first European as a Caucasian savage, advancing slowly in the stone age through the epochs of the mammoth, the reindeer and the horse, into the bronze and iron ages, among the rude arts which precede the period of modern culture, and claims a similar development for the races of Asia, Africa and America. Mr. E. D. Stevens, in an elaborate work entitled Flint Chips, a Guide to Pre-historic Archæology, has collected an immense variety of facts from different quarters

of the globe, in favor of the position that the most barbarous state is a condition not so much of degradation as of arrested or retarded progress, the starting-point of which was the manufacture of rude stone implements. Mr. Hadder M. Westropp, in his "Pre-historic Phases," has ingeniously classed the fir, the deer, and the hunter with the palæolithic or old stone epoch; the oak, the goat, and the shepherd with the neolithic or new stone epoch; and the beech, the horse, and the farmer with the bronze epoch; citing the Mexicans and Peruvians as examples of nations which have spontaneously risen through these phases, from the primitive barbarism to a high degree of civilization. Sir John Lubbock, having descended, in his "Pre-historic Times" through the different human epochs, among the sticks, bones, and horns of the most ancient stone period, finds all mankind in a savage state, out of which a few races have independently raised themselves by degrees and toilsome efforts; and in his subsequent work on the "Origin of Civilization" has collected from different parts of the world evidences of incipient culture in the most barbarous tribes, as well as of original barbarism in the most civilized nations. Sir Charles Lyell, as if to complete these various speculative researches, in his "Geological Evidences of the Antiquity of Man," has abandoned the middle ground of his earlier works and arrayed all existing anthropological knowledge in favor of a gradual transmutation of species, languages and arts throughout the whole organic series, from the earliest mammalia of the pliocene period up to the civilized man of our epoch. And assuredly, whatever may be thought of such a genealogy, or of the likelihood of tracing it, we must at least grant that it would be possible now to construct a scale of co-existing animal, savage and civilized races, ascending from the image of an ape toward the image of a God.

The other hypothesis, however, is that of the constancy of species. It had been held in the Church from the time of Augustine that plants, animals and man were instantaneously created full grown and perfect, several thousand years ago, and have ever since continued the same, each after its kind; and the early naturalists, proceeding upon this dogma as an hypothesis, not only distinguished man as a rational and reli-

gious animal, but maintained the absolute invariability of his species, even in its anatomical characters, through all ages, climates and conditions. Linnæus was careful to insist that every genus as well as species is a primordial creation; and classed the American, European, Asiatic and African races as mere varieties of the one human genus of bimana, or two-handed animals. Cuvier, so far from admitting a genealogical connection between extinct and living species, held that the palæontological series had been repeatedly broken by huge cataclysms or sudden deluges, which swept all existing animal life from the face of the globe, thus precluding the possibility of gradual transmutation. Count Lacepède, one of the professors of the Museum who reported upon the scientific spoils of the Egyptian campaign, agreed with Cuvier in inferring the immutability of species from the identity between mummied and living specimens of the cat, the dog and the bull; and when Lamarck, another member of the commission, urged that the climate of Egypt had also remained unchanged, replied that the same species might now be found in all other climates, both torrid and frigid, from Canada to Guinea, continuing to-day as they were three thousand years ago, when borne in the sacred processions on the banks of the Nile. The French naturalists also argued that domesticated animals, so far from changing their species, retain the anatomical structure belonging to them in a wild state, under all mere physiognomic differences, and only vary in the direction of original predispositions, the different races of the cat, the dog and the swine having descended from the tiger, the wolf and the wild boar; whilst the more highly-educated animals, such as the elephant and the parrot, soon reach the limits of their improvability and remain stationary for generations. It was likewise shown that hybrid varieties or mixed breeds of plants, animals and men are largely due to artificial contrivance, rather than anything like natural selection, and soon die out through infertility of their offspring, thus disclosing an actual barrier to the supposed indefinite transmutation. Indeed, the weight of scientific authority against that opinion became so strong that, until its revival and modification by Darwin, it was discussed as a mere curious speculation or tentative hypothesis, rather

than with the positive tone of assured knowledge. The Swiss naturalist, Necker, declared that nothing less than the shock of a comet or some similar disaster, could put an end to a species so long as the planet lasted. Pictet, the eminent palæontologist, reasoning from the present backward to the former course of nature, from the known stability of Egyptian species for thousands of years, from the natural obstacles to mixed breeds, from the persistence of the same anatomical type in both the tame and the wild state, and from the influence of climate in destroying no less than modifying animal races, denied even the Lamarkian scale of successive faunas as well as the passage of one into another, and favored the idea of a destruction and creation of species at each catastrophic epoch in the history of the globe.

And the same general reasoning has been pressed through all the anthropological sciences against the doctrine of human evolution. Distinguished physiologists, such as Valentin, Clark and Von Baer, have maintained that the fœtal development of man, so far from proving his animal pedigree, merely reflects that unity of plan which has pervaded the organic world from the beginning. And more recently, in his last lectures on the Method of Creation, Professor Agassiz has distinctly repudiated the use made of his discoveries by Darwin, Hæckel and Martin; averring that it would be as absurd to argue the material descent of cats from fishes at the present day, as in past epochs, because of any mere ideal correspondence in their fœtal development. Leading ethnologists such as Blumenbach, Prichard and Lawrence, long ago held that both savage and civilized man, like the wild and domesticated brute, retain the same anatomical structure in all climates, under all diversities of complexion and culture, and moreover, that the facial angle of Camper, ranging through fifty degrees from the low forehead of the ape to the vertical brow of the Apollo, though it may indicate a scale of races, affords no proof whatever of the physical evolution of one out of the other, but rather indicates, as the French Academy at length declared, a profound gulf, without connection or passage, separating the human species from every other. Eminent philologists also have set up language as an im-

passable barrier to such development. Wilhelm Humboldt claimed it as the distinctive faculty in man, of which no signs or rudiments can be found in the whole mute creation. Professor Max Müller, in his Science of Language, instead of referring its origin to mere animal cries or imitative sounds, which the dog and the parrot share with man, characterizes such explanations as the bow-wow and pooh-pooh theories, and traces all human speech to the faculty of reason as exercised in selecting, eliminating and combining certain phonetic types of thought, which are the roots of all languages. And the archæologists, until quite recently, have described primitive man as lapsing from civilization, through golden, silver, and brazen ages, rather than rising from barbarism through epochs of stone, bronze and iron. Champollion, Remusat, Humboldt and Schoolcraft, with their numerous associates in the study of ancient monuments and traditions, were inclined to regard the savage tribes of Africa, Europe and America as but the dispersed and degenerate descendants of the civilized races of Asia, such as the Egyptian, the Indian and the Chinese. The distinguished architect, Mr. James Ferguson, in his work on the Rude Stone Monuments of All Countries, maintains that we cannot get beyond the epoch of the pyramids; the cromlechs at Stonehenge and in other parts of the world having been erected by partially civilized races within the first ten centuries of the Christian era. Professor Piazzi Smyth of Edinburgh, in a recent work entitled Antiquity of Intellectual Man, according to his remarkable theory of the astronomical design and physical structure of the Great Pyramid, dates the historic epoch from a high state of scientific knowledge, about six or seven thousand years ago, and argues, from the premises of Lyell himself, that no other human remains than mere flint-chips and rude pottery, no civil monuments, such as coins, machines, statues, have been found in the caves and river-banks which archæologists are so busily exploring. The so-called archæo-geologists have also been met upon their own ground. Quatrefages, Pruner-Bey and Dawson have maintained that the famous Neanderthal skull is simply exceptional, if not already set aside by the older crania of Borreby, Engis and Mentone which indicate the exist-

ing Caucasian type of high forehead and steep facial angle; and that the most ancient remains of man which have yet been found, so far from proving his bestial origin, give hints of religious as well as savage ideas and manners.

To all this evidence against development has been added the proof of a positive degeneracy. Dr. Waitz admits, in his Anthropology of Primitive Peoples, that the first elements of civilization always appear as communicated from one people to another, and of none can it be proved how, when and where they became civilized by their own inherent power. The Duke of Argyle has lately published a treatise on Primeval Man, in opposition to the views of Lubbock, maintaining that the stone, bronze and iron epochs overlap and run into each other within the historic period, and the loss of ancient arts, and especially of religion, by such tribes as the Eskimo and the Hottentot, may have been due to adverse climate and the general corruptibility of human nature. Count Gobineau, in his work on Moral and Intellectual Diversity of Races, argues that as a dunce and a genius may be born of the same parents, certain branches of the human family are in a state of permanent inferiority, whilst others show a capacity for social improvement and civilization. Hugh Miller describes such inferior races as varieties which have lapsed from the Caucasian type, fallen, hopelessly lost, and as races doomed, after a few generations, to disappear. Mr. Westropp indeed acknowledges, not merely that there are some instances of degraded races, but that all civilized races are destined to a course of decline as well as progress, under immutable physiological laws. And if the notion of transmutation be thus separated from that of progression, or if it is admitted that successive species, languages and arts have been produced and extinguished in a series with an ever-advancing type, we can readily imagine the scale of civilized and savage humanity descending as well as ascending between the image of a God and the image of an ape.

As to the unity of mankind, there were also two hypotheses. According to the older view, all races have descended from one pair. It had been the ancient teaching of the Church, that Adam and Eve were created in the garden of Eden as the first parents of the whole human family; and the early an-

thropologists had been accustomed to trace back to them, through the three sons of Noah, the second father of mankind, all the nations, languages and arts which had overspread the earth. Adelung, thus proceeding upon the Mosaic ethnography, had imagined the first land divided from the sea to have been the high table-ground of Central Asia, where the Creator placed the first human pair on the gentle slopes of Cashmere, between snowy mountains and grassy plains, drained by rivers to the north, south, east and west, affording every variety of climate, plant and animal, and thus uniting all the characters of Paradise, the cradle of mankind. Linnæus, in a more scientific spirit, had conceived of an original continent, emerging from the universal ocean, like an island mountain, belted with climatic zones, stocked with the first ancestors of all plants, beasts and birds, and thus serving as a sort of central nursery, from whence, as the earth dried and became habitable, were propagated from one pair the different varieties of mankind, together with the floras and faunas found associated with them in appropriate climates. Blumenbach had declared that his five great branches of the human family, the Mongolian, Malay, European, Ethiopian and American, were no more distinct species than the numerous breeds of domestic swine, which all naturalists admitted were descended from the wild boar. Cuvier also had referred his three varieties of mankind, the Caucasian, Mongolian and Ethiopian, to a single Asiatic pair, maintaining that their white, yellow and black complexions are due to climate, food and habit, whilst their original unity was indicated by anatomical sameness and fertile intermarriages.

And later ethnologists, with increasing knowledge, made such oneness of nature and descent a matter of special study and vindication. Prichard, the first of English authorities on the question, in his elaborate volumes, argued physiologically, that neither the color of the skin, nor the texture of the hair, nor the shape of the skull, nor the angle of the face, nor the size of the brain, however endlessly varied, can constitute different human species; philologically, that the consanguinity and common descent of races are proved by the affinity and common origin of languages; and historically or archæolog-

ically, that the memorials, traditions and customs of all nations converge backward, from Africa, Europe and America, toward the same birth-place and ancestry, in Eastern Asia. Professor Muller, the great German physiologist, reasoned, from the wide geographical distribution of the same plants and animals in such endless varieties, that all human races, from the Negro to the Greek, belong to one sole species, propagated by the union of two individuals, though he doubted whether their origin in the same pair can now be determined from experience. Dr. Bachman, the chief of the American school, in his work on the Unity of the Human Race, sagaciously observed that cultivated plants, such as the vine, rice and wheat, and domesticated animals, such as the horse, the sheep and the dog, now everywhere associated with man, also originated with him at the same geographical centre in the eastern continent, and that to suppose him incapable of coping with the most opposite climates, would make him generically inferior to certain animal species, which have spread from pole to pole around the globe. And numerous other similar arguments may be found in the works of leading physiologists, such as Lawrence, Carpenter, Owen of England, Tiedman, Weber, and Vrolick of Germany, Flourens and Quatrefages of France, and Pickering, Hall and Cabell of the United States.

The growing evidence of philology has also been made to corroborate the physical unity of the species. The two Humboldts very early recognized the comparative study of languages as a method, surer than either history or tradition, for ascertaining the affinity of the most widely separated nations, retracing the course of their migrations, determining their relative degrees of approximation to the primitive race and speech, and ultimately solving the whole problem of their dispersion from a common point of radiation. Dr. Latham, proceeding upon such principles in his elaborate works on the varieties and migrations of mankind, has grouped the three great races, Mongolidæ, Atlantidæ and Japetidæ, with three corresponding species of language, the monosyllabic dialects of Asia and America, the agglutinate dialects of Africa, and the amalgamate dialects of Europe, as in different stages of geographical and linguistic departure from the one primitive

Asiatic race and tongue. Professor Max Müller, in his Science of Language, whilst urging that the classification of races and languages should be independent of each other, holds to the common origin of both on separate grounds, and argues the possibility of tracing all existing dialects through the amalgamate, agglutinate, and radical stages back to one primitive speech, if not to one pair. The Chevalier Bunsen repudiated the notion that allied languages and races are not historically connected, but only ideally analogous, and in his Philosophy of Universal History endeavored to join together the African, the Polynesian, the American and the European with the Asiatic dialects as respectively but degraded, eccentric, arrested and advanced formations, which have proceeded, with migratory races, from the original seat of mankind, in northern Asia.

And the archæologists, in like manner, have long been endeavoring to trace the arts, as well as languages and races, to the same centre as the cradle of civilization. Authorities in the study of ancient history, such as Niebuhr, Wilkinson, Mommsen and Rawlinson, have derived all the culture, science and religion of Europe from Central Asia, through Egypt, Assyria and Greece; whilst Oriental scholars, such as Schlegel, Huc and Paravey, have referred to the same source the traditions of Hindostan, Thibet and China. American antiquarians, such as Schoolcraft, Catlin and Prescott have followed the Mongolian races from Japan across Behring Straits and through the Pacific islands to North and South America, and there sought to identify the Indian mounds and Mexican temples as of the same Asiatic origin with the cromlechs of Britain and the pyramids of Egypt. And other explorers, such as Ellis, Lang, Bradford and Pinkerton, reasoning from a similarity of traditions and customs, have traced the American aborigines from Asia, through Polynesia and Australia, over the widest part of the Pacific, and even from Africa as well as Europe, across the Atlantic, drifting in the kyac and the canoe, long before the modern voyages of Columbus and Magellan. Rector Rauch of Augsburg, among other valuable anthropological studies on the Unity of Mankind, has collected and digested the evidence of modern travellers, such

as Barrow, Davis, Assal, D'Urville, Beechy, Dieffenbach, Jacquinot, Wallace, in favor of the early peopling of the whole earth from the same geographical centre. To all this array of physiological, linguistic and antiquarian testimony, may be added that of eminent transmutationists, such as Lyell, Hæckel and Pouchet, who are ready to admit the possible and even probable descent of races from one pair, provided only the popular chronology be sufficiently lengthened to allow of a secular development from primitive animality through the stone, bronze and iron epochs of pre-historic barbarism.

According to the polygenists, however, different races are descended from different pairs. And the opinion, though not in a scientific form, is as ancient as its opposite. It was the boast of the Greeks and Romans that they were autochthonous, or terrigenous, sons of the soil, whilst all foreigners differed in nothing from the brutes. Plato excluded barbarians from his ideal republic, and Galen would not prescribe for the preservation of their young as being no better than the buffalo and the wild boar. But with the spread of Christianity, as a gospel for Jew and Gentile, Greek and Barbarian, this inhuman doctrine disappeared, and the common origin of races became so essential to orthodoxy, that Lactantius and Augustine even denied the notion of antipodes, because of its supposed inconsistency with the descent of all men from the same parents. It was not until geographical discovery had proved the round form of the earth, and made known to Christendom other and widely different races, concerning which history and Scripture appeared silent, that Paracelsus scandalized his contemporaries by asserting that there must have been an American Adam besides the Asiatic. And the scepticism grew scientific as the researches of naturalists brought to view the analogies afforded by indigenous plants and animals. Buffon had called attention to the great natural barriers to a geographical distribution from one centre, existing in wide oceans and adverse climates, as confirmed by the specific differences between American and Asiatic quadrupeds in the same latitude. Cuvier had shown from the evidence of palæontology that some of the domestic animals of Europe, such as the ox, could not have originated from the paradisaic centre in Asia.

De Candolle, in his classical treatise on Botanical Geography, had divided the earth into stations and habitations of plants, or localities and continents, each with its own peculiar vegetation termed a flora. Pennant and Waterhouse had parcelled out over the globe similar zoölogical provinces, each inhabited by its own nation of quadrupeds termed a fauna. Professor Forbes, in some memoirs on the connection of the British flora and fauna with the glacial epoch, had already announced his theory of specific centres or foci of creation, at which each species of plant and animal is supposed to have emanated from one pair and remained within the same area, except as dislocated by migration and geological changes. Linnæus, Buffon, and Blumenbach, moreover, as if unconsciously anticipating such views had long before made geographical classifications of mankind, treating the several continents of Europe, Asia, Africa, and America, as distinct ethnological kingdoms, each affording its own variety or race of men.

And now it was but a logical step further, to consider the human species in different regions, as indigenous as the floras and faunas with which it is found connected. Eberhard, in a treatise on the Human Races, seems to have been the first to refer the five continental races of Blumenbach to as many botanical and zoölogical provinces, each of which had brought forth a human pair as the keystone of its whole organic world. Professor Agassiz, about the same time, in a memoir on the Geography of Animals and in his "Principles of Zoölogy," broached the idea that men are autochthons, originating, like plants and animals, on the soil where they are found, but unlike them created in one and the same species, or after the same primordial type; and subsequently, in his "Sketch of the Natural Provinces of the Animal World, and their relation to the different Types of Man," he divided the earth's surface into eight great zoölogical realms, producing as many distinct human species, though all with the same intellectual and moral nature. Doctors Nott and Gliddon embodied the views of Agassiz in their "Types of Mankind," and pushed them to their logical results, with still more boldness in their volume, "The Indigenous Races of the Earth," collecting scientific authorities, with a cyclopædiac range, from every related de-

partment in favor of a multiple origin of the human species. Dr. Morton, the chief authority on American crania, in the last named work, is cited as averring that the Indians are the true autochthons or primeval inhabitants of this vast continent, on the ground that our species had its origin not in one but in many creations, which diverging from their primitive centres have met and amalgamated as we now find them, with the extremes connected together by intermediate links of organization.

And besides the testimony of such professed ethnologists, special monographs and arguments have been brought from other connected sciences. Physiology is made to testify to the original diversity of species. Rudolphi, Burmeister, and Vogt suggested that the descent of millions of men from one pair in so short a time would imply incredible fertility, as well as leave the important matter of peopling the earth to mere hazard in distant regions and adverse climates. Desmoulins, Borey, and Hamilton Smith have reasoned from the phenomena of hybridity in animal species, that the existing mixture of human races does not imply their common parentage, but only a higher type of fecundity. Knox, Baudin, Kennedy, and Hunt have referred to the difficult acclimatization of the English in India and America, as proof that the different continental races are confined within climatic barriers which they cannot overleap without more or less speedy degeneracy and extinction. And other physiologists, such as Virey, Meigs and Brown, have argued positively for their diverse origin from differences of complexion, as the white, the yellow, and the black; of skull, as the long, the broad, and the round; and of brow, as high, low, and medium; whilst some, with Gobineau and Pouchet, have thrown into the scale a supposed psychical diversity of species, indicated by the mass or folds of the brain, and expressed in different mental capacities.

Philology has been cited as a witness for the plural origin of languages as well as races. Professor Agassiz, assuming all language to be an animal function predetermined by the vocal organs, argued from their structure in different races, that the primitive tongues of men were as distinct as the scream of the eagle, the song of the thrush, and the quack of

the duck. M. Alfred Maury, whilst admitting that allied tongues indicate allied races, denied that they point to a common origin for either, on the ground that the classification of races must precede that of tongues, and that any analogies between them, so far from indicating the same descent, are due to mere similarity of mental organization and condition, the same thoughts everywhere spontaneously expressing themselves in the same sounds and words. Professor Pott, the distinguished German etymologist, has written a treatise on the "Diversity of Human Races," based upon the assumption of a multiple origin of languages at points totally independent of each other. Mr. Crawfurd, late British Resident at the Court of Java, and author of numerous learned works on the Indian Archipelago, in opposition to Humboldt's view of a parent tongue for the Malayo-Polynesian races, maintained their separate origin, and explained any words common to their several dialects as the mere effect of maritime adventure and commerce; such as are now taking place on a larger scale among the more confused civilized languages. And Professor Schleicher has distinguished certain language-provinces over the earth, like those of the botanist and zoölogist, grouping together as an example the aboriginal dialects of America, which, unlike the mixed tongues of Europe and Asia, having been long secluded, still appear as indigenous as the tribes, animals, and plants where they are spoken.

Archæology, too, has been summoned to prove the plural origin of arts as well as races. Francis Pulsky, one of the collaborators of Nott and Gliddon, in his memoir entitled "Iconographic Researches on Human Races and their Arts," has endeavored to show that races are artistical in different degrees, and retain their respective arts, whether rude or fine, as indigenous products which cannot be transplanted or amalgamated. Mr. Buckle, in his History of Civilization, has illustrated the predominance of climate and locality over race by contrasting the Mongolian hordes of Northern Asia, with their kinsmen in Persia and China, who have developed the most flourishing monarchies of the old world. Tylor, in his "Early History of Mankind," contends for similar beginnings of language, writing, and culture in all parts of the globe,

insisting that the ancient American architecture, instead of betraying an Asiatic origin is native to the soil, and merely analogous to any that may be found elsewhere. South American antiquarians, such as Acosta, Waldeck and Dupaix, have ingeniously argued from the accumulated garden mould, the successive tree-growths and the scattered monumental ruins of Peru and Yucatan, for an antiquity dating beyond the Egyptian Pyramids, toward the highest pre-diluvian epochs. North American archæologists, such as Romans, Gallatin, and Squiers, have been inclined to treat the Mississippi earthworks and Mexican ruins as purely native productions of indefinite age, bearing only accidental resemblance to the Celtic cromlechs and Hindoo temples. And some European scholars, such as Klaproth, and Waitz, from the similarity of Asiatic and American traditions and customs have simply claimed the new world as the early home of the Mongol races of Polynesia and Western Asia, and indeed as the cradle of civilization for the other continents. Dr. Augustus le Plongeon, in a memoir on the "Vestiges of Antiquity," read before the New York Geographical Society, has proposed to explain the archaic resemblances among the pre-historic races of both hemispheres, on the geological hypothesis that this continent in its tropical regions became the seat of a primitive civilization which has ebbed and flowed around the globe, with the secular motion of the earth's axis, from America to Europe and from Europe back to America. In connexion with all this ethnological, philological, and archæological evidence, it should be borne in mind, that leading progressionists, such as Agassiz, Gobineau, and Quatrefages, whilst admitting a plurality of human races, deny their animal origin, and still adhere to the ideal, moral and religious unity of the species.

As to the destiny of mankind, there have also been two opposite presentiments. One class of anthropologists has looked for an indefinite improvement of the species. It had been an ancient prediction among both the Jews and Gentiles, that man, with the earth he inhabits, is to be renewed and his lost Paradise regained; whilst some modern Christians, as we shall see, have so literally interpreted the Messianic prophecies as to anticipate something like a physical

transformation of plants, animals, races, languages and arts at the second coming of Christ to renovate both nature and humanity. And this view, without its miraculous element, has occasionally assumed a color of scientific prevision. It has been suggested, and even argued, by the evolutionists of an advanced school, that the development of the globe, with improving climates, floras and faunas, favors a corresponding development of the human species toward a higher physical type than the animal and savage tribes, out of which its civilized races have already emerged. Sir Charles Lyell, remarking upon the geological changes which affect climate and species, has observed that man, in proportion as he occupies the earth, displaces certain animal tribes, as they have before displaced their ruder predecessors, and that a similar predominance of civilized over savage races renders it inevitable that in the course of a few centuries the Indians of North America and the Hottentots of New Holland will be remembered only in poetry or history. Mr. Alfred Wallace, consistently with his hypothesis, has argued that we may foresee a time when only cultivated plants and domesticated animals will remain, and human selection will have replaced natural selection everywhere except in the sea, in order that man may acquire his proper dominion over the whole habitable world. Mr. Darwin also has remarked, in accordance with his doctrine of survival, that human races, like the different animal species, are evolved one out of another, the weaker ever exterminated by the stronger; and his more eager disciples are already predicting an era when savage and barbarous peoples, no longer able to maintain themselves in the struggle of existence, will have faded away before the progress of civilized races throughout the earth. Dr. Büchner especially, in his work on the Man of the Present, Past and Future, has collected the testimony of the school for a sort of physiological prognosis of the human species, as it will appear, at the close of the whole organic development of the planet, in an artificial Paradise or earthly heaven of its own creation.

Besides such systematic treatises, there have been bold conjectures and brilliant surmises to the same effect, gathered from the different anthropological sciences. Some writers, on

physiological grounds, have predicted ever-improving races. Tiedemann, Gregory and Armstead have written arguments and appeals in favor of the indefinite improvability of the Negro; citing examples of individuals of that race who have attained the greatest proficiency in the arts and sciences. Crawford, Krieg and Cooley have argued that miscegenation, or the mingling of different races, instead of causing any of them to deteriorate, elevates the lower to a higher degree of physical and mental vigor, as may be seen in the successive reinforcement of the European nations and the American colonies with Roman, Celtic, Norman and Saxon blood. Francis Galton, in his essay on "Hereditary Genius," has framed a statistical argument to prove that the qualities of great men, instead of being accidental or anomalous phenomena, are directly traceable to parentage and ancestry, and transmissible, with augmented power, by means of judicious marriages; referring to ancient Athens as a city stocked with a breed of heroes, whilst modern Europe has lost its race of saints through the celibacy of the clergy. Dr. Prichard, from a historical comparison of British skulls at different periods, has concluded that the present race of Englishmen have larger brain-cases than their forefathers. Carl Vogt professes to find in the brain itself, as the organ of thought and culture, a capacity of indefinite improvement, both in structure and function, which, under the laws of descent and training, may be propagated, with cumulative force, from generation to generation. And Mr. J. W. Jackson, treating our species as only the commencement of a new zoölogical order of mammalia, has ventured to prognosticate the coming man as a biped of the bird-type, covered with feathers, as if to realize, it would seem, the ideal angel of Eastern fancy.

Philological writers have predicted ever-improving languages as well as races. Leibnitz, the Empress Catherine and the Adelungs seem to have had before their minds, as a possible fruit of their comparative studies, the discovery or invention of a common universal language, hidden amid the confused tongues of mankind, or to be constructed, by international intercourse, as a bond of ultimate unity. Bunsen, Lepsius and Müller, in the year 1854, united with other distinguished lin-

guists in a conference called to devise a Standard Universal Alphabet, in which the different vocal sounds shall be defined physiologically, according to the organs of speech, as gutturals, dentals and labials, and expressed typographically by the fewest possible letters, to serve as an instrument of scientific study and human advancement. Schleicher, Grimm and Bleek, consistently with their view of language as an animal faculty of gradual growth, would look forward to its progressive improvement with the improvement of the brain and larynx, or increasing capacity of thought and expression in coming generations. Professor Whitney, of Yale College, is such an enthusiastic admirer of English, that he has declared in his "Study of Language," his belief that it will not be found unequal to anything the future may require of it, even though it should become the leading tongue of civilized humanity.

Other writers, on archæological and geographical grounds have anticipated ever-improving arts as well as races and tongues. Maclaren, in the article on America in the Encyclopedia Britannica, has intimated, that the new continent, though not half the size of the old, were its resources as fully developed, would be capable of sustaining five times the present population of the globe. Professor Marsh, in his "Man and the Earth," treating of physical geography as modified by human action, has projected still further and grander changes, to be brought about by vast industrial enterprises, reclaiming barren and insalubrious regions, connecting the commerce of distant oceans, as at Suez and Darien, and even improving the climates of the different continents. Mr. Carey, in his "Social Science," reasoning from the principles of agriculture, chemistry and political economy, in opposition to Malthus, maintains that the treasury of nature is unlimited, the supply ever increasing with the demand, and the demand ever increasing with the multiplication and combination of mankind. Dr. Shaafhausen argues that in proportion as man rises out of the animal state, he emancipates himself from all climatic and local conditions, becomes concordant and cosmopolitan in his culture, and steadily approximates an ideal unity of thought, feeling and endeavor which, though it could not have existed at the origin of the race, now shines

before us as the brilliant goal of the human development. And still bolder prognosticators, such as Jackson, Figuier and Flammarion, leaving the earth as at length to be survived or outgrown by man, have fancied the human species, under progressive laws, with new physiological characters, migrating to the sun, for a higher cosmical stage of life, and thence even to the stars, as other suns, of which the planets are but embryos. There is certainly ample scope in such heavenly worlds for the wildest dreams of human progress.

Another class of anthropologists, however, have looked for the ultimate extinction of the species. According to the ancient traditions, the golden, silver and brazen ages of mankind, being indicative of a career of moral degeneracy, terminate in a deluge or conflagration, as a divine judgment, by which the corrupt race is destroyed; and times of great social depravity have naturally been regarded as ominous of decline and speedy extermination. The Roman satirists thus predicted the decadence of the empire. The dissolute followers of Louis XIII. are said themselves to have exclaimed, on the verge of the French revolution, "After us, the Deluge!" And sceptical philosophers, such as Montesquieu, Voltaire and Volney, have speculated in a like spirit upon the general decay of nations and fall of empires as the inevitable fate of mankind. But some more scientific observers, apart from all sacred or profane prediction, have fancied physical rather than moral causes of extinction, in a declining vitality of the earth, with all the floras, faunas and races which it sustains. Eminent astronomers, as we have seen, have declared that a time must come, when our planet, from the dissipation of its own internal heat or the cooling down of the solar fires, will have become shrouded in universal winter and rendered, like the moon, uninhabitable by man or any living thing. Geologists, also, have predicted great catastrophic revolutions of the terrestrial surface by flood or fire, destroying all existing animal or human life. Botanists and zoölogists, such as Brocchi and Naudin, independently of any astronomical or geological causes of extermination, have maintained that the primitive vigor or prolific virtue of every species of plant and animal, like an expended force, is on the decline and must, sooner or later, die

out in weakness and sterility; whilst others, with Fleming, Wallace and De Candolle appear to have argued that cultivated plants, domesticated animals and civilized men, besides displacing and extirpating as many wild species, only impoverish more than they enrich the lands upon which they depend for sustenance, and so must ultimately exhaust the general treasury of nature.

And on the basis of such inductions the anthropological sciences seem to be already adjusted for a general prognosis of human extinction. Ethnology has brought a presage of declining races. Oliva, Humboldt, the Kanes have told us of long extinct peoples in Peru, of decaying populations in Mexico, and of starving Eskimos at the Arctic pole. Schoolcraft, Hochstetter and Pöpping, among many others, have argued that the aboriginal savages of the North and South American States are steadily disappearing before the march of civilization, whilst the Spanish, French and English races which have supplanted them, according to Knox, Baudin and Kennedy, are themselves but doomed to perish, after a few generations, in the disastrous process of acclimatization. Gobineau, Pouchet and Nott have maintained that the amalgamation of races, so far from improving them, tends to their physical deterioration and speedy exhaustion, through infertility, as may be seen in the Spanish creole, the American mulatto and the Indian half-breed of Mexico and Canada. The French ethnologist, Virey, at the close of his volumes on the Natural History of the Human Race, has denied that there can be any "megalanthropogenesis," (or breeding of great men,) referring for proof to the obscure descendants of Socrates, Cicero and Charlemagne, and to the proverbial degeneracy of royal and noble houses, amid all the appliances of European civilization. Dr. Maudsley, treating of brain diseases, maintains that brilliant wit and genius, as in poor Charles Lamb, are not seldom symptomatic of an insane temperament which, if propagated, can only issue, after a few generations, in madness, idiocy and extinction. Dr. S. Weir Mitchell, in his timely paper entitled "Wear and Tear," has sketched a suggestive picture of the cerebral exhaustion and decline of ancestral vigor, attendant upon our higher culture. And thoughtful far-seeing observers

in all civilized nations are foretelling an Iliad of woes as the inevitable result of the luxurious vices which are slowly sapping the brain and virtue of the noblest breeds of men.

Philology also has uttered a prediction of steadily declining languages. Jesuit and Protestant missionaries in America, Africa and Asia, for several centuries, have been reporting innumerable savage dialects already perished or perishing with the tribes which use them, not only without a literature, but without even such a memorial as the Eliot Bible of Massachusetts. Latham, Lepsius and Bunsen, by their hypothesis of a primitive Aryan language in Asia, seem to agree with the early linguists, in treating all the barbarous tongues of the scattered family of mankind, as only decaying fragments of the pristine speech of Eden, or dying echoes of the great jargon at Babel. Schlegel, Bopp and Grimm have traced the genealogy of the dead languages, which have flourished in succession from the banks of the Ganges to the shores of Spain, the Sanscrit, the Hebrew, the Greek, the Latin and the Celtic, now lingering like ghosts amid the effete nations which once spoke them, whilst even the modern literary languages which have supplanted these ancient classics, such as the Italian, the Spanish, the French, the German and the English, according to Max Müller, are themselves likewise doomed to inevitable decay, except as reinforced by the new blood of vulgar speech. And purists in all languages are sighing over the decline of classic models and the reign of slang as but signs of returning rudeness and general corruption.

Archæology, too, has furnished a precedent of declining arts as well as races. The conservative school of antiquarians, with more or less distinctness, seems inclined to regard all barbarism and savagism as mere decaying and putrid fragments of a primitive civilization, from which different peoples and tongues have lapsed through physical degeneracy or adverse climate and situation, and to represent all existing civilization as destined to a like decay from like causes. The Duke of Argyll, as we have seen, thus explains the decline and loss of primeval art among barbarous and savage nations. Mr. Wendell Phillips, in one of his popular lectures, has exalted the lost arts of antiquity over any modern handicraft. Dr.

Joseph R. Thomson, when discoursing upon the wonders of Egyptian civilization, thought them fitted to destroy the conceit of the proudest capitals of modern times. And even at the height of our boasted material progress, some English economists, of the school of Malthus and Ricardo, have been foreboding an industrial decline, consequent upon a gradual increase of population beyond the sustaining powers of the soil, and the natural supplies of coal, iron and other means of physical life and progress. In a word, if we listen to such gloomy vaticinations, we must believe that all human races, languages and arts are but doomed to extinction, and man himself, as he exhausts the earth, only destined to bury himself in its ruins.

At length we are reaching that third and ultimate stage of open rupture, in which the whole biblical anthropology is to be repudiated as of no scientific import or even philosophical value. The earlier naturalists who professed theism, such as Lamarck and the author of the "Vestiges," were not inclined to question the scripture doctrine of the First Adam, and others, who were of a more sceptical turn, such as De Maillet and Monboddo, simply observed a tone of irony and raillery which could not be charged with irreligion. But later, more advanced disciples of the school are now beginning seriously to treat the origin of man as a mere zoölogical question, and to accept openly the most unscriptural consequences of their speculations. Lyell, indeed, has discussed the antiquity of man through an elaborate treatise, as if he had never heard of the book of Genesis, unless he refers to it by his suggestion, that at some remote period the whole space between the highest animal and the lowest human races may have been cleared at a bound by one start of formative nature, and the salient epoch appear no more miraculous, after all the mists of mythologic fiction shall have been dissipated by historical criticism, than the birth of an extraordinary genius from rude parents. Mr. Darwin, manifesting a similar reserve as to the Scriptures, maintains that there is no evidence that man was aboriginally endowed with belief in a God, and declares with intrepid candor and consistency that he would rather be descended from the heroic little monkey, who

braved death in defence of his keeper, or the brave old baboon who rescued his comrade from a crowd of dogs, than from a savage who practices cannibalism and sorcery. In the same spirit Professor Rogers, as President of the American Scientific Association, has lately maintained that the cruelties practised by the lower races, and the outrages attributed to total depravity among civilized men, are but the outbursts of a savage nature, inherited from their animal progenitors. Dr. Charles Hodge complains of the chief archæologists of the day, that they seem to have discarded the Biblical history, only themselves to build up enormous chronologies upon evidence which would not determine an intelligent jury in a suit for thirty shillings, and though unable to trace any design in the eye or the hand, can find enough in a flint-chip or bone implement to indicate a whole pre-historic epoch. Dr. Asa Gray admits, while he deplores, the tendency of the average scientific mind, as soon as it finds out how anything is done in nature, to conclude that God did not do it, and can only look forward to some better time when the religious faith which survived the notion of the fixity of the earth, may equally outlast the notion of the fixity of the species which inhabit it. And Professor J. P. Lesley, as if speaking for his whole order, in his treatise on "Man's Position and Destiny viewed from the Platform of the Sciences," declares of the statements in Genesis, that men of science now treat them as old Jewish legends, and, indeed, have become so indifferent to them, that it is not worth while to try to show their absurdity.

On the revealed side of the same science, there have been corresponding departures from the rational theory of mankind. In the first stage came the rejection of portions, at least, of that false scientific anthropology which had very early crept into the Church. Though the study of races, languages and arts was largely prejudged by an authoritative exegesis, there appeared divines, now and then, sagacious or fortunate enough to foresee and welcome more scientific researches. The Irish St. Virgilius in the ninth century, dared to advocate the theory of antipodal races, when all Christendom believed it a mere heathen myth, inconsistent alike with the locality of hell and our descent from Adam. Thomas Aquinas, with

other schoolmen, seems to have taught in his "Summa," that mankind was created potentially or derivatively under physical law, and not, as most modern theologians hold, by an instantaneous fiat or miracle. Calvin, in his "Genesis," whilst exalting the divine image in unfallen man, did not scruple to draw a lesson of humility from his previous origin in the ground, and even insisted upon his gradual formation as his peculiar distinction among animals. Turrettin, though he fixed the date of the human epoch to the day in the civil calendar, was nevertheless wise enough to premise that the whole question is chronological rather than theological. Isaac Peyrère, first a Protestant infidel, then a Catholic priest of the Oratory, endeavored to explain the origin of the newly discovered North American races in a "Theological System according to the Pre-adamite Hypothesis," which, had he not recanted it, might have distinguished him as the forerunner, if not the founder, of the school of Forbes and Agassiz. Bishop Butler, in his "Analogy," with rare forethought, appears to have started several questions of recent anthropology, such as the material origin of man, his development from an animal state, and his gradual predominance as the governing animal in our globe. Bishop Berkely, also, in his Alciphron, though maintaining the received Mosaic chronology, treated of the invention of arts and sciences, and the peopling of the world in the light of Egyptian and Chinese traditions, with the learning and spirit of a modern antiquarian. President Stanhope Smith, of Princeton College, at the close of the last century, published a work, still quoted among ethnological authorities, on the "Causes of the Variety of Complexion and Figure of the Human Species," advocating the theory of climatic influences, in opposition to Lord Kames, and in agreement with Cuvier and Blumenbach. The Spanish Jesuit Hervas, at the beginning of the present century, digested the linguistic reports of his missionary associates from all parts of the world, in a voluminous "Catalogue of Languages," containing six hundred dialects, discarding Hebrew as the primitive speech, and anticipating discoveries since associated with the names of Humboldt and Bopp. And during the present century, as an incidental fruit of Protestant missions, a host

of investigators throughout the heathen field, such as Heckewelder in America, Moffat in Africa, Morrison in Asia, have been contributing ethnological, philological, and archæological data for re-casting the whole Scripture doctrine of the First and Second Adam, as including in one blood, and speech, and creed, every kindred, and tongue, and people under the heaven.

During all this time, however, the great majority of divines, unconscious of the newly forming scientific anthropology, remained attached to the ancient dogmas respecting the original perfection of man, his probation and fall in Adam, and the predicted new race in Christ. As to the first of these doctrines, Pagan, Hebrew, and Christian traditions seemed to have converged backward to a common primitive state of purity and happiness. According to the doctrine of the Zend-Avesta, Ormuzd, the good genius, reigned alone during the first age of the world, in a land of delight and plenty, until the first man ate of the Hom, a tree guarded by myriad angels, when Ahriman, the evil genius, entered the happy realm, and brought death to men. The Chinese had their tradition of a garden in the midst of the mountains, on which perpetually flowed the fountain of immortality, dividing in four streams, as the source of all life. The paradise of the Egyptians was upon a steep mountain on an island, where Osiris was born and lived with his sister and wife Isis, with abundance of corn and wine, amid perennial fruits and flowers. Hesiod, Apollodorus, Ovid, Juvenal, and other Greek and Latin poets, had embellished various myths, which were regarded as only distorted reminiscences of lost paradise, such as the image for the first man formed by Prometheus out of moist earth, whilst the winds breathed life into it at the command of Jupiter; the gifts of Pandora endowed, like another Eve, with every divine blessing, but also with the fatal casket of all human woes; the nectar or ambrosial food of the gods of which no mortal dare taste; the garden of the Hesperides, with its miraculous trees and golden fruit, enclosed with walls and guarded by a dragon; the old Saturnian age of innocence when men and animals conversed together in a state of nature; and the pure and blissful Atlantides or Hyperboreans,

who in a clime of perpetual sunshine knew no discord, sickness and death. The rabbins had indulged in endless speculations respecting the divine image in which man was created. In the apocryphal Book of Wisdom he was described as endowed with an immortal body, with dominion over the earth, and with moral uprightness of soul. Sirach included in this divine likeness, together with authority over the animals, the gifts of reason, speech, and other excellencies. Philo, consistently with the Platonic view, placed the image of God in the rational soul, considered as a reflection or embodiment of the divine reason or logos. And the cabbalists generally attributed to Adam, not only extraordinary physical strength and beauty, but a fabulous amount of scientific knowledge, expressed in the names he applied to natural objects, and handed down in the very etymology of the Hebrew, which they regarded as the divine language of Eden. The Church fathers had also delighted to magnify the physical and mental perfection of Adam. Tertullian, Melito, and Audœus, combining materialistic views of the soul with anthropomorphic views of the Deity, sought for the divine image in the mere bodily structure and appearance, especially the human face divine, which before the fall was supposed to be unspeakably majestic and luminous. Chrysostom, Athanasius, and Gregory of Nyssa, dwelt upon the more refined conceit which placed it in the godlike dominion of man over nature, as well as in the rational control which he exercises over his own animal passions. Irenæus, Clement, and Origen, finding the chief seat of the divine image in the soul of man, were naturally led to regard his noble countenance and regal dominion as but external expressions of that inward likeness. Augustine, as if combining these views, endeavored to discern in the threefold constitution of body, soul, and spirit, that which could be regarded as a miniature reflection of the Trinity. And nearly all the fathers distinguished, according to Genesis, between the image and the likeness of God; the former being original and potential, and the latter acquired and developed.

The schoolmen proceeded to refine these distinctions with still more subtlety. John Scotus, Hugh of St. Victor, and Alexander Hales placed the image of God in that natural

or essential humanity, possessed both before and since the fall, whilst the likeness of God was included in those supernatural additional gifts of righteousness, immortality, and honor which have been forfeited and lost. Peter Lombard, in his Sentences, referred the former to the mental faculties or knowledge of truth, and the latter, to the moral affections or love of virtue. Bernard pushed the distinction so far as to declare that the image of God even in Gehenna might ever burn, but could not be consumed, as it pertains to the very essence of the soul, which, though without the moral likeness of Divinity, would still reflect His intellectual nature. Aquinas admitted the distinction, but held that it was more verbal and logical than actual, as man before the fall had never been in the mere natural state, without grace as well as without sin. Berthold, and other mystics, fancied a sort of a divine superscription or signature on the very face of man, the eyes and connected brows, ear, nostrils and mouth, together outlining with flourished letters the phrase "homo Dei." And all the schoolmen engaged in the most absurd discussions concerning the physiology, language and knowledge of Adam and Eve, and what these would have become had they not fallen from paradise. Roman Catholic doctors at the Reformation simply accepted and emphasized the patristic and scholastic anthropology. The Council of Trent made it a damnable heresy to deny that Adam through his disobedience lost that righteousness and holiness in which he had been constituted. Bellarmin claimed the whole testimony of the fathers, including Augustine, for retaining the divine image in fallen man, and referring the divine likeness to that original righteousness, which was like a festive garment of which he has been denuded, a splendid dowry of paradise which he has forfeited, a virginal wreath of which he has been despoiled. And Suarez cited to the same purport the authority of Aquinas and the schoolmen. Protestant divines endeavored to redefine the image of God with some new distinctions. Luther maintained that the whole moral as well as intellectual likeness was concreated in Adam, and has been lost by the fall; the rational soul itself, as it now exists in man, being but a corrupt inheritance. Hollazius included in the original

divine image the attributes of knowledge, righteousness, holiness, immortality, and majesty, and defined it as an accidental likeness in distinction from that essential likeness pertaining to the Eternal Son alone, as the express image of the Father's person. Calvin carefully animadverted upon the gross physical image of Tertullian, the refined intellectual image of Chrysostom, and the subtle trinitarian image of Augustine, maintaining that these are but expressions or scintillations of that true moral image which had its chief seat in the heart, and thence irradiated the intellect and transfigured the body. And later Puritan divines, such as Owen in his "Discourse on the Holy Spirit," and Edwards in his "Religious Affections," whilst admitting a certain extant physical and intellectual likeness of Deity, blurred and marred by the fall, insist that the whole moral image has been utterly obliterated, and can only be supernaturally restored by a new creature in Christ Jesus. It was not possible as yet to institute any scientific correspondences, such as are now broached, between the savage and the paradisaic state, or between the pre-historic ages of the archæologists and the antediluvian arts described in Genesis.

As to the fall of mankind in Adam, there had also been a general concurrence of theological opinions before and since the Christian era. All Gentile traditions, the Persian, the Indian, the Chinese, the Egyptian, the Greek and Roman, seemed to point back to a primitive apostacy, like so many broken links of a chain, remotely connecting with some one head of the whole human family. The rabbins had thus explained the universality of death and sin. In the Chaldaic paraphrase of Ruth, it was taught that because Eve ate of the forbidden fruit, all the inhabitants of the earth are subject to death. The Son of Sirach declared that of the woman came the beginning of sin, and through her we all die. And the Talmudists generally vindicated the suffering of saints and infants, with other descendants of Adam, as but an illustration of the Scriptural principle that the iniquity of parents is visited upon children from generation to generation. The Greek fathers dwelt upon the physical effects of the fall, whilst the Latin fathers traced its moral consequences. Justin, Clement and Chrysostom

variously characterized the sin of the first pair as pruriency, voluptuousness and vanity, into which they were seduced by Satan, and in consequence of which their descendants became mortal, diseased and accessible to temptation. Tertullian, Ambrose and Augustine taught more explicitly that the human race was contained in the loins of the first man, that all men have sinned in Adam, their representative, as well as progenitor, and have, therefore, not only inherited his corrupt nature, but actually incurred the guilt of his transgression, together with its consequent miseries, both in body and soul. And this general difference between the Eastern and Western Churches became more pronounced and extreme within the latter Church by the controversy with Pelagius, who held that Adam's sin injured no one but himself, except through its example, and that all men are born innocent and morally healthy. The schoolmen ranged themselves between Augustinism and Pelagianism. Anselm and Aquinas held that the sin of Adam, with the loss of his original righteousness, was imputed even to unbaptized infants and pagans as a moral guilt, rather than as a mere physical inheritance; while Abelard and Duns Scotus taught that such classes were only involved in the punishment of that first transgression, since all sin consists in voluntary acts. And the mystics and early reformers, such as Wessel and Savonarola, though referring the consequences rather than the guilt of Adam's sin to his descendants, viewed their actual transgression as but an imitation and repetition of the original fall. At the Reformation, while the Catholics as a body reverted toward Pelagianism, the Protestants advanced to an extreme Augustinianism. Jansen, Arnauld and Pascal, who in this respect were but Protestants within the Roman Church, restored and defended the doctrine of Augustine, in its most uncompromising form, against that of Pelagius. Luther and Melancthon, in their formularies, taught that the corruption of human nature, propagated from Adam, was so complete and profound, as to involve the entire loss of the divine image and extend to all the higher faculties of the soul, heart, mind and will. Calvin and Beza, in their Confessions, more explicitly held that Adam's sin was directly imputed to his posterity, so that his fault was also our own, and by a just

judgment of God we were condemned to be born utterly corrupt and depraved. The Westminster standards, taking Adam to be the federal or representative as well as natural head of the human race, declared that the covenant being made with him, not only for himself, but for his posterity, all mankind, descending from him by ordinary generation, sinned in him and fell with him in his first transgression. And this became substantially the doctrine of the chief evangelical Churches of the last century. It was too soon as yet to attempt any scientific verification of these dogmas, such as is beginning to be made, by associating co-Adamite and pre-Adamite theories of the savage and animal origin of man with a special divine dispensation to Adam as the natural progenitor of the Caucasian race and federal representative of the whole human family.

As to the new race in Christ, the second Adam and Lord from heaven, it had been the general faith for centuries that our Saviour became the type as well as founder of a restored and perfected humanity, predestinated to be conformed to His image. While all the sacred traditions of the Gentile nations streamed backward in melancholy retrospect of lost paradise, the Messianic prophecies among the Jewish people, in marked contrast, reached forward in joyful expectation of a new economy, which would restore and far excel the glory of the old. And though among the early Christians, the two rival Judaizing and Hellenizing factions, the Ebionites and the Docetæ, in defining the doctrine of the God-man, soon began to exaggerate His humanity at the expense of His divinity, or His divinity at the expense of His humanity, yet during the subsequent ages of the Church, at length there grew up the orthodox dogma of the two natures, divine and human, in one and the same person. The fathers, the schoolmen and some of the reformers have since indulged in numerous subtle speculations upon the mysterious union of these two natures in Christ, but all have been agreed that by taking unto Himself a true body and a reasonable soul He became man, and, like another Adam, was the federal head or representative of a new regenerate humanity, first exemplified in His own person and yet to be extended to the whole race of mankind.

The attempts to find a scientific basis for such dogmas belong to the speculative Christology of a later day.

At length, in the last schismatic stage, we now find an exclusively biblical or dogmatic anthropology which would deliberately shut its eyes to all the discoveries of ethnologists, linguists and antiquarians, as having no bearing whatever upon either the veracity of Scripture or the true, complete doctrine of mankind. A former school of divines, like Stanhope Smith and Bachman, could contribute scientific memoirs and treatises upon the human species without fear of imperiling any sacred interest; and devout laymen of the same school did not scruple to include among their authorities the Hebrew Scriptures as at least of equal weight with the Hindoo Shaster and the Chinese Shoo-king, nor hesitate to rank the unbroken traditions of the great religious races of Asia and Europe far above the scattered legends of savage tribes in America and Polynesia. But another and very different class, in our day, seem bent upon resisting all the light which the new anthropological researches can shed upon the meaning of Genesis, and are still urging the old, crude interpretation in the face of the most earnest protests. Principal Dawson, in his "Story of Earth and Man," gives his opinion that the evolutionism which professes to have a Creator somewhere behind it is practically atheistic and, if possible, more unphilosophical than that which professes to set out from self-existing star-dust, containing all the possibilities of the universe. Dr. Gray warns such apologists that, for the defence of a mere untenable outpost, they are firing away in their catapults the very bastions of the citadel, and deprecates their unwise attempt to force devout naturalists into the ranks of Büchner and Vogt. Dr. Hodge, in a recent able treatise, defines Darwinism as Atheism, makes it incompatible with the orthodoxy of Mivart, Henslow, McCosh and Brown, and also depreciates the classical illustration by which Paley sought to prove a creative design in the animal species. The Rev. Walter Mitchell, from the chair of the Victoria Institute, as if speaking for the Christian scientists of England, declares that Darwinism is an attempt to push the Creator farther back out of view and dethrone God, and that the creation and maintenance of species

within impassible barriers is the true teaching of Genesis and the only scientific theory. Such hasty prejudgment has been especially shown in reference to the question of the origin of the human species. Dr. Keil, in his Genesis, would deny that such a question falls within the province of inductive science, and has described the organization of Adam out of the ground and his animation with a soul, as an instantaneous miracle, wrought by an omnipotent fiat, without connection with any previous process or product of creation. Dr. Kurtz, though he admits that all the powers of nature conspired with the Spirit of God in the formation of man, denies that there could have been any time or succession in the process, as it would be derogatory to imagine him in the animal stage even for a moment. And other learned divines and commentators, living at a time when anthropologists on all sides are unearthing the fossil flora and fauna coeval with primitive man, seem to find nothing more in the sixth day of Genesis than a confused succession of monster creations, enormous fishes, reptiles and mammals, following each other in a few hours, and serving only as a prelude to the doctrine of Adam's fall.

And thus anthropology, the science which includes the origin and destiny of our species, if dismembered by the indifferent spirit, would but retrace the frescoes of Raphael and the paradise of Milton, or revive the sphinxes of Hesiod and the centaurs of Virgil.

Passing next into the psychical sciences, we shall there, in like manner, discover the sciolists and dogmatists gradually entrenching themselves during the last three centuries in opposite systems of thought and faith, which have stood, amid the clouds of speculation, like lofty feudal castles, frowning defiance across a contested border.

If the gulf, which has been yawning between the biblical and scientific sections of these sciences, has not yet become as obvious and familiar as that which we have traced in the other sciences, yet it will seem none the less frightful to those who can discern it, but rather the more so, when it is found that scientific hypotheses are apparently excluding religious dogmas from domains of research, which have long been claimed as the sole province of revelation.

The Schism in Psychology.

In psychology, for example, the two antagonists have long been settling into a divided empire. On the rational side of the science may be traced three successive stages of departure from the revealed doctrine of the soul. In the first and legitimate stage of healthful separation and progress, came the decline of the false biblical psychology of the mediæval Church. It was the period when the ghosts, witches and demons, which had so long haunted the region of the soul, were fleeing before the dawn of free thought, and the human mind, escaping from its cloistered reveries, began to observe inductively its own phenomena, faculties and laws. In the face of the ecclesiastical statutes and maledictions against witchcraft, John Weir, a humane physician of Cleves, and Reginald Scott, an enlightened English lawyer, had opened the way to medical psychology by exposing the frightful atrocities inflicted upon lunatics, and urging that they be treated as patients, rather than as mere demoniacs and criminals. The sceptical movement of Montaigne had combined with Protestant attacks upon monasticism, penance and purgatory, to clear the whole field of psychological research. Lord Bacon, too, had already sketched, among his reconstructed sciences, more exact theories of body and soul, with a logic and ethics which should treat of the intellect and the will, and though he applied his new organon mainly to physics, had expressly held it to be also applicable in the psychical region to the operations of memory, judgment, anger, fear, shame, as well as those of heat, light and vegetation. Renè Descartes, usually claimed as the founder of modern psychology, returning to the standpoint of Augustine, had given the death-blow to the whole scholastic pneumatology, with its complex series of vegetative, appetitive, sensitive souls, by sharply distinguishing the thinking mind from the animal body as a separate entity, and treating of its ideas, volitions and affections as purely immaterial phenomena. Benedict Spinoza, as a disciple of Descartes, in his profound treatise upon Ethics, had explored those fundamental relations between psychology and ontology, which have filled so large a space in all subsequent philosophy, from

Leibnitz to Hegel. Thomas Hobbes of Malmesbury, in his crude treatise on Human Nature, at the same time disclosed those superficial relations of psychology with physiology, which have since been so much more scientifically treated by Hartley, Erasmus, Darwin and Maudsley. John Locke, as a follower of Hobbes and opponent of Descartes, then led the way, by his famous Essay on the Human Understanding, to the inductive investigation of the intellect itself, with inquiries into its powers of sensation and reflection, and into the origin and association of the ideas they afford. Antony Astley Cooper, Earl of Shaftesbury, as a friendly critic of Locke and forerunner of Hutcheson, in his elegant "Inquiry concerning Virtue," restored to ethical psychology the theory of a moral sense or natural perception of the sublime and beautiful in moral actions. Godfrey Leibnitz, in his "New Essays on the Human Understanding," sought the just mean between Descartes and Locke, whilst by his "Monadology" and "Pre-established Harmony," he probed for the first time the essential relations of body and soul. Christian Wolf, as the pupil of Leibnitz, assigned mental science to its due place in the philosophical encyclopædia, not only distinguishing it from anthropology, under the name of psychology, which it had borne since the time of Goclenius, but further dividing it into rational and empirical psychology. Alexander Baumgarten, also of the Leibnitz-Wolfian school, wrote the first treatise, infelicitously styled "Æsthetic," treating of the imaginative taste or faculty of perceiving and judging the beautiful in nature, in art, and in literature, since investigated by Kaimes, Burke and Allison. David Hume, meanwhile, as the astute critic of Locke, in his "Enquiry concerning the Human Understanding," had won the distinction now accorded him, of discovering that Scylla of scepticism, upon which a mere empirical psychology must ever be stranded. Immanuel Kant, as the subtle critic of Hume, then achieved in his "Critique of the Pure Reason," the corresponding merit of disclosing that Charybdis of mysticism, in which a mere rational psychology cannot but be whelmed, by maintaining our knowledge to be the sheer product of our own cognitive faculties, which he described as threefold; the sense, with its intuitive forms

of time and space; the understanding, with its conceptive categories of quantity, quality, relation and modality; and the reason, with its regulative ideas of God, the soul and the world, pronounced theoretically false, though practically true. At length Sir William Hamilton, as the erudite critic of all schools, in his "Discussions," "Dissertations" and "Lectures," may be said to have organized scientific psychology, by classifying the mental phenomena as cognitions, feelings and volitions, by treating systematically of the corresponding mental faculties, and by formulating the corresponding mental laws which constitute the psychological sciences of Logic, Æsthetics and Ethics. And since that time, a host of eager investigators from different points of view, such as Spencer, Bain and Maudsley, Jouffroy, Ribot and Janet, Hickock, Porter and McCosh, Ulrici, Brentano and Lotze, have been pursuing the scientific study of mind, considered as a subtle organism, regulated by physical and mental laws.

During all this period, however, in the second stage of indifference, was growing up a mere speculative psychology, in place of that true biblical psychology which still held its ground. For the Scripture doctrines of the creation, regeneration and glorification of the soul, were gradually substituted various conflicting hypotheses concerning its origin, development and destiny. As to the first of these problems, there arose the two rival schools of spiritualists and materialists. According to the former, the mind is essentially immaterial. It had been long taught in the Church, by fathers and schoolmen, such as Augustine and Aquinas, that the soul is a pure spiritual essence, created in the body at birth and separable from it at death; and the early psychologists endeavored to use this dogma as a scientific theory, with more or less freedom from religious prejudice. There were at first general assertions of the mind's separate subsistence. Count Mirandola, at the very dawn of Italian learning, as a Platonist, had defended the spirituality of the soul with ascetic rigor. Sir John Davis, expressing English opinion before Hobbes, in a philosophical poem entitled "Know Thyself," described the soul of man as self-subsistent, independent of the senses and humors, wielding the body as its instrument and diffused

through all its parts like the morning light through the transparent air.

But by degrees the spiritualistic movement became more scientific. The first step was simply that of sundering mind from matter. Descartes, the father of systematic spiritualism, in his "Meditations," with the terse motto "I think, therefore I am," defined the mind as a something which thinks, or a thinking substance, in distinction from matter, which is an extended substance, compounded and divisible. Sir Kenelm Digby, one of the brilliant writers of the day, soon afterwards published at Paris "A Treatise declaring the Operations and Nature of Man's Soul," in which he distinguished mind from matter as an immaterial or spiritual substance, without parts and local motions. The English Platonists generally, such as Henry More, John Smith and Norris, also maintained the Cartesian definition of the soul, though with apologetic motives, and were followed by a long train of controversial writers, lay as well as clerical, such as Loude, Burthogge, Fleming, and at length Andrew Baxter, whose "Enquiry into the Nature of the Human Soul" was designed to maintain its immateriality on the ground that matter is inert, without self-action, and movable only by some spiritual being.

The next step taken was that of rendering mind like matter. Leibnitz, advancing between Descartes and Locke, in his "Monadology," or Doctrine of Atoms, towards the views of the English physician, Glisson, on the energetic nature of substance, and of Cudworth, on the plastic force in nature, conceived matter, in its essence, to be as living and percipient as mind, and defined the soul a conscious monad or thinking force, in distinction from mere material monads or vital forces, such as animals and plants. Wolf adopted the Leibnitzian definition of matter and mind as metaphysical points, but denied that material monads are percipient or can have ideas. Kant, agreeing with Hume rather than with Wolf, in his "Critique of the Pure Reason," held the soul to be an inscrutable substance, whose immateriality can neither be proved nor denied; yet in a work entitled "Psychical Monadology," he boldly conjectured that the mind perceiving and the thing

perceived, the internal and the external substance, may both be thinking essences, homogeneous and co-percipient; thus approximating the spiritualism of Leibnitz. The final step has been that of reducing matter to a mere psychical manifestation. Berkley, it will be remembered, had argued that there exist nothing but percipient minds and their ideas, or spiritual substances and their phenomena. Shopenhauer, in opposition to Kant, held the soul to be immediately knowable, by internal perception, as a conscious will, supporting phenomena, and pronounced materialism impossible, according to the axiom, "No object without a subject." Fichte, Schelling and Hegel, taking the idealistic road from Kant, lost themselves in a kind of universal spirituality of both mind and matter. Herbart, Beneke and Lotze, taking the realistic road from Kant, have described the soul respectively as a spaceless essence, acting at a single point, as an immaterial nucleus of psychical forces, as a conscious monad or spiritual atom, coexisting with a plurality of conscious and unconscious atoms. It will be observed that the spiritualistic movement, at its extreme, tends to convert all matter into mere mind.

According to the rival school, however, the soul is essentially material. And the opinion is as old as its opposite. It had been held by Democritus and Epicurus that the mind is but a composition of etherial atoms, such as air and fire, which is dissolved and lost at death; and this notion, as derived through Lucretius and Seneca, had apparently been countenanced by Tertullian. But with the rise of the Christian dogmas of carnal depravity and the separate disembodied state, it gradually disappeared during the middle ages, to be revived only by successive conquests of physical speculation over religious prejudice. The movement began with inquiries concerning incorporate spirit. The Italian Pomponace, as an Aristotelian, may be said to have led the way, by his conception of an animating soul inseparable from the body. Campanella described the soul as a corporeal spirit, subtle, luminous, deriving all its knowledge through the senses. It was one of the maxims of Montaigne, that the senses are the beginning and the end of all knowledge. John Chrysostom Magnen, a French professor at Pavia, embodied the growing

sentiment in a popular work, with the significant title "Democritus Reviving."

Thenceforward several more scientific departures may be traced. The first was simply that of connecting the mind with sense. Peter Gassendi, whose "Philosophical System of Epicurus" has distinguished him as the father of modern materialism, and whose playful invocation to Descartes, "O Spirit!" provoked the stinging retort, "O Matter!" had emphasized the Epicurean conceit that ideas are the mental images of material objects, derived through the senses. Hobbes, issuing his book in time for it to receive a dying kiss of approval from Gassendi, described such ideas or images as directly impressed upon the brain, and there decaying and reviving, according to their relative intensity. Locke, agreeing with Gassendi rather than with Hobbes, added reflection to sensation as a source of ideas, but in opposition to the Cartesian definition of mind, suggested that matter itself might not be incapable of thought or of reflection as well as sensation. The English free-thinkers generally, such as Layton, Coward and Collins, eagerly seized upon this crude conjecture, and strangely enough were joined by some clerical recruits, such as Dodwell, Bold and Perronet, in the supposed interest of orthodoxy. The Abbè Condillac, a French admirer of Locke, in his celebrated treatise on "Sensation," at length proceeded to resolve reflection itself into sensation, or to transform all ideas into sensations, illustrating the process by an imaginary human being, encased in marble and allowed successively to acquire the different senses and combine the corresponding ideas by acts of attention, memory and judgment.

The next step was that of merging the mind in the brain. Hartley, who had been studying Hobbes and Newton as well as Locke, with the method of a physician, in his "Observations on Man," represented the white medullary substance of the brain and nervous system as the instrument of sensation, ever vibrating, like an exquisite harp, to external impressions under the laws of association, and thus originating all our simple and complex ideas. Charles Bonnet, a Swiss physician, somewhat more crudely than Hartley, described the mind, in his "Essay on Psychology," as operating only through cer-

tain elastic fibres of the brain, to which all ideas are attached, and whose structure and movements should, therefore, form the first subjects of mental science. George Prochaska, a distinguished German physician, at the close of the last century, enunciated a growing opinion that different parts of the brain have different mental functions, which admit of direct physiological investigation. Dr. Gall, combining this theory with the physiognomical principles of Lavater, then argued, in his work on "The Functions of the Brain," that the compacted organs growing within the skull, determine its exterior size and shape, and may be found expressed on its surface, where, with the aid of Dr. Spurzheim, he mapped as many as thirty mental faculties. Cabanis, the physician of Mirabeau, emerging from the French revolution, with his "Treatise on the Physical and Moral Constitutions," boldly declared the nerves to be the whole man, and reduced all sensation and reflection to the action and re-action of the brain, which he vaguely likened to a gland secreting thought, as the liver secretes bile or the stomach digests food. Count de Tracy, author of the famous "Ideology" or Doctrine of Ideas, proceeding on the physiological principles of Cabanis, after the manner of Condillac, analyzed all our cognitions, feelings and volitions into mere forms of nervous sensibility and cerebral action.

The final step has been that of reducing the mind to a physical force. Dubois Reymond, of Berlin, having shown the analogy and connection between the nervous force and electricity, likened the brain to a voltaic battery, receiving and discharging currents of sensation and volition as a miniature telegraph. Dr. Maudsley, in his acute treatise on the "Physiology and Pathology of Mind," has defined the mind scientifically as an exalted natural force, developed from the inferior chemical and vital forces of the body and concentrated in the brain, through which organ thought is evolved, memory organized, and the will conserved as the momentum of personal energy. Professor Barker of Pennsylvania University, in his "Correlation of Vital and Physical Forces," bridging the chasm at which Maudsley pauses, has argued that reason, intelligence, emotion, in short, thought-force, like muscle force, comes from the food, which is itself but potential heat

and motion, and may be expended again as muscle force in the physical efforts of speech and gesture, and possibly measured by the foot or the pound. Professor Huxley, as if to illustrate such views practically, whilst delivering his well-known lecture on the "Physical Basis of Life," imagined himself clad in the "Peau de Chagrin" of Balzac, a magical wild ass's skin, which caused the wearer to shrink toward nothingness with every gratified wish, and explained how he proposed, after that literary effort, to transubstantiate sheep into man, or mutton into thought, unless perchance, being shipwrecked on his homeward journey, he should prematurely relapse to lobster. It will be observed that the materialistic movement, at its extreme, aims to convert all mind into mere matter.

As to the second problem, the conduct of the will, there arose also two rival schools, the necessitarians and libertarians. According to the former, the soul is a mere necessary agent. It had been the orthodox teaching from Augustine to Aquinas, that the will of man acts under the predestination of God, and by the fall has lost all power to do good; and this dogma passed into all the earlier psychological speculations at the Reformation. Luther, in his controversy with Erasmus, wrote a treatise on "The Slavery of the Will," maintaining its total moral disability or loss of liberty in spiritual things, and likening its passive agency to a saw in the hands of a carpenter. Calvin discussed the subject learnedly against the sophists of the Sorbonne, as he termed his antagonists, describing the will as naturally determined by the understanding, and therefore diseased, fettered and necessarily evil as God is necessarily good. Melancthon, recasting the Aristotelian ethics, made the will of God as expressing His wisdom and justice the supreme law of morals; described free agency as part of that divine image which has been lost though not annihilated; and represented natural causes, even the stars, as operating necessarily upon human affairs, except when divinely interrupted. And Cornelius Jansen, whose "Augustinus" was condemned by the pope, re-constructed that school of predestinarian ethics from which Pascal assailed the casuistry of the Jesuits.

But gradually several more scientific forms of determinism

appeared. It was at first attempted to link the will with divine impulse. Descartes, basing his whole psychology upon theism, had represented body and soul as two diverse substances, mechanically co-operating in perception and volition, with the concurrence or assistance of God, rendered in some incomprehensible manner. Louis de la Forge, physician at Saumur, an ardent disciple of Descartes, in a "Treatise on the Human Spirit," then explained by the theory of occasional causes how the will of God is the real cause, and body and soul the occasional or exciting causes of their correspondent ideas and sensations, their reciprocal volitions and motions. Pierre Silvain Regis, a still more enthusiastic expositor of Descartes, in his "System of Philosophy," substituted for the theory of occasional causes that of second causes, according to which the will of God as the efficient First Cause is ever exerted through body and soul, as second causes acting and re-acting with their senses and ideas, like two puppets moved by a concealed operator. Spinoza, dissatisfied with such explanations, boldly rejected the Cartesian dualism of body and soul, matter and mind, and merged them both in Deity as the one absolute substance of which they are but modifications, the sole universal agent of which they are instruments. Leibnitz, in order to mediate between Descartes and Spinoza, then imagined an infinite series of active substances or monads issuing from the great First Substance or Monad, with pre-established harmony of mind and matter, body and soul, like that of two perfect watches so adjusted as to keep time together; or a machine servant and master, so contrived as to work with each other. And these speculations as pursued by Geulinx, Wolf, and Bonnet, would have reduced man to a mere spiritual automaton impelled by divine power.

It was next attempted to chain the will to necessary motives. Hobbes, in a "Letter upon Liberty and Necessity," had defined volition, the last excited appetite, and represented the will, in its fancied freedom, no more self-determined than a wooden top spinning hither and thither, without knowing what has lashed it into motion. Locke, agreeing virtually with Hobbes, in his chapter "On Power," held the will to be self-determined only so far as moved by uneasiness or desire,

being continually driven toward good and evil in spite of itself, as when one is forced into agreeable company, or dragged down with a falling bridge. Antony Collins, whose celebrated "Philosophical Inquiry into Human Liberty" marked the crisis of the controversy, then defended the moral necessity of the will or its determination by the reason and senses, as the only theory consistent with our experience, with the law of causality, with the dignity of a rational agent, with the divine foreknowledge, with rewards and punishments and with true morality. Jonathan Edwards, reasoning as a philosopher as well as divine, with his masterly "Inquiry into the Freedom of the Will," then assailed successively the theories of self-determination, of indifference, and of contingency, as involving endless contradictions, as destructive of the rational and moral faculties, and as tending to universal uncertainty and confusion. And soon these speculations were pushed to the most opposite conclusions, in one direction by the French fatalists, such as Diderot, La Mettrie, and D'Holbach; in another, by the English materialists, Priestley, Belsham and Godwin; and in another, by the American predestinarians, such as Dwight, Hopkins, and Emmons.

But at length, as the final step in this direction, it was attempted to bind the will in mental laws. Hartley, restating principles derived by Hobbes from Aristotle, had represented all reasoning and affection, all logic and ethics, as the mere result of association, a mental process of combining the nervous vibrations, or ideas and feelings, into judgments and habits, under fixed laws by which the will is necessarily determined in its action. Erasmus Darwin, advancing beyond Hartley in a materialistic direction, subordinated both sensation and volition to the laws of association, and enchained the will in acquired habits or catenated trains of nervous and muscular motions. James Mill, advancing beyond Hartley in a spiritualistic direction, with his "Analysis of the Phenomena of the Human Mind," not only traced the laws by which ideas associate themselves in clusters and series, but defined the will itself as nothing more than the power of certain interesting ideas, among them the complex idea of self, which, when decomposed, will vanish into an unknown quantity, afterwards

termed by his son, John Stuart Mill, a mere series of feelings, or possibilities of feeling. The later Scottish associationalists generally, however, such as Stewart, Brown, and McIntosh, have taken a conservative position, involving the will in mental laws, but allowing it a special control of those laws. The recent German associationalists, such as Herbart, Beneke, and Lotze, pursuing the path opened by the elder Mill, have pressed mental laws to the extreme of obliterating all original distinct faculties, by variously asserting the will itself as an effort determined by the strongest masses of ideas, a balancing of psychical forces and products, and a resultant movement of combined monads or ideas. The latest English associationalists, such as Lewes, Bain, Maudsley, and Spencer, pursuing the path opened by the elder Darwin, have brought mental laws under the more general physical laws of correlation, conservation, and evolution, by tracing the growth of will out of nervous force into a collective impulse; the transmission of a pre-determining organization with cumulative power from generation to generation; the secular development of human out of animal forms; the spontaneous generation of life upon our globe, and the origin of the globe itself in a primitive nebula; and have thus justified the bold assertion of Huxley that thought, memory, reason, conscience, all our art, philosophy and religion once lay latent in a fiery cloud. At the necessitarian extreme, the will would appear to be little more than a developed force.

According to the libertarians, however, man is a free moral agent. And the opinion has been defended against its opposite from the earliest times. It had been held successively by Epicurus, by Pelagius, and by Duns Scotus, that the will is independent both of causes and ideas, that it is a God-given faculty of choosing between good and evil with the aid of the Holy Spirit; and that it is superior to the understanding, under the authority of the Church. And these tenets at the Reformation were re-affirmed in controversies, partly dogmatic, and partly philosophical. Erasmus, as the antagonist of Luther, wrote his treatise on "The Freedom of the Will," illustrating a frequent alliance of that theory with classic taste and culture. Bellarmin, in his Disputations, defined the will

a power of choosing or resolving, and represented the divine predestination as guided by a foreknowledge of human freedom. Arminius, remonstrating against the Dutch predestinarians, pronounced the free will a secondary cause of salvation, when it co-operates with the divine grace which has excited it. Socinus, in his Theological Prelections, rejected predestination altogether, leaving the will, even though weakened by its own sins, still free to accept or reject divine aid. And Loyola, for the defence of the hierarchy, had already organized that school of libertarian casuistry by which the will was practically as well as theoretically absolved from the claims of morality.

But by degrees the growing spirit of indeterminism assumed more scientific guises. The first effort was to free the will from divine constraint. Henry More, the first of the Cambridge Platonists or Latitudinarians, in his "Ethical Manual," after grouping the passions as useful instruments of reason, defended the freedom of the will against predestination, as the essential condition of morality. Cudworth, the learned chief of the school, projected a comprehensive argument against the material fatalists, who suppose a universe of mere matter and motion; the immoral fatalists who imagine a God decreeing the evil as well as the good in us, and the moral fatalists who assert morality in God but necessity in us to do good or evil without freedom and responsibility; these several antagonists being successively opposed, the first with his "Intellectual System of the Universe," or theory of unconscious mind in nature; the second, with his "Eternal and Immutable Morality," or doctrine of an essential goodness in the very nature of things rather than in the mere will of God; and the third, with his "Treatise on Free Will," or the spontaneous liberty of moral agents. Lange, Rudiger, and Crusius, together with a numerous body of German Theologians, vigorously assailed the pre-established harmonism of Leibnitz and Wolf, as incompatible with strict theism, with free agency and with moral distinctions. And indeed the whole school of predestinarian ethics was attacked with philosophical weapons from the most opposite points, by the Jesuitical casuists, such as Suarez, Escobar, and Gonzalez, by the latitudinarian

churchmen, such as Whitcote, Tillotson, Stillingfleet, and by the libertine courtiers, such as Bolingbroke, Rochefoucauld, and Mandeville.

The next effort in this direction was to free the will from necessary motives. Cudworth had already written his brief posthumous, Treatise on Free Will against Hobbes, distinguishing moral agents from mere machines or animals, as alone capable of self-determination, of praise and blame, and divine rewards and punishments. Samuel Clarke, who opposed the automatism of Leibnitz as well as Collins, in his "Remarks upon the Philosophical Inquiry concerning Human Liberty," then maintained that free will is self-motion, or the proper action of the soul; that motives or judgments next preceding its action are distinguishable from the action itself; that such motives and judgments if merely acting upon it without its acting for itself, would reduce man to a passive machine; and that he differs from the brutes, whose action is but spontaneous, by being able to act freely and with a sense of right and wrong. Richard Price, discussing the "Doctrine of Philosophical Necessity" with Priestly, maintained that even animals possess liberty or self-motion; that such liberty is not only itself possible but a matter of our consciousness; and that it may even include motives considered as the occasions or ends of our acting, and not absurdly imagined to be the physical or efficient causes of action. Thomas Reid, with more subtle analysis, in his "Essays on the Active Powers of Man," having defined free will as activity or a power of causing effects, and having defended it as a mental fact intuitively discerned, implied in moral responsibility, and essential to all deliberate plans and actions, then assailed the opposite theory, maintaining that motives are mere influences and not efficient causes; that the best motives do not always influence us; that many trifling actions are done without motive; that some capricious and obstinate actions are done against motives; that the strongest motive only prevails through the will and not against it; and that uniform conduct is as consistent with liberty as with necessity. Henry Tappan, advancing beyond Clarke and Reid, in his "Review of Edwards' Inquiry," at length defined the will a conscious self-moving

power, indifferent to all motives, capable of obeying either reason or passion, or both together, or neither, with the prerogative in any case of a contrary choice. And these opinions were maintained, more or less philosophically, in England by Whitby, Taylor and Turnbull, in Scotland by Stewart, Brown and McIntosh, and in America by Taylor, Beecher and Finney, Bledsoe, Whedon and Hazard. But the final effort has been to free the will from mental laws. Kant, in his "Critique of the Practical Reason," had asserted the absolute freedom of the moral will in the whole transcendental region; representing it as a law unto itself, superior even to the laws of thought, which logically exclude as problematical what it ever affirms as real respecting God, the soul and the world. Fichte, recoiling from Spinoza beyond Kant, in his "System of Ethics according to the Doctrine of Science," besides referring all intelligence to our own spontaneous activity, exalted free-will over the very laws of morality as a self-poised power, determining rights and duties by its mere rational volition. Coleridge, recoiling from Hartley beyond Kant, in his "Aids to Reflection," not only ranked the speculative reason and will, above all physical laws, in contrast with the inertia of the mineral, the sensitiveness of the plant and the spontaneity of the animal, but enthroned it as a spiritual power in a realm of pure spirit, originating its own acts, without the need of motives or stimulants. The later French libertarians, such as Maine de Biran, Cousin and Jouffroy, pursuing the spiritualistic path indicated by Fichte, have pressed free-will toward absolute control of all mental laws by variously describing it as the spiritual cause of thought and action, the essence of self and personality, and the source of moral worth and perfection. And the recent German volitionalists, such as Shopenhauer, Frauenstädt and Hartmann, following the realistic path from Kant, have been inclined to subordinate all physical as well as mental laws to mere will power, by tracing its gradual rise and intensification from the blind primordial energy, through the successive mechanical, chemical and vital forces, through the unconscious instincts, to a conscious volition, baffled by universal contradiction and suffering, and so have landed themselves in the dismal paradox that the world, as

we know it, had better not be, having originated in irrational volition and culminated in despairing reason. At the libertarian extreme, the will would thus appear to be scarcely less than a creative cause.

As to the remaining problem, the destiny of the soul, there arose the two schools of immortalists and mortalists. According to the former, the soul is naturally immortal. It had been repeated from Socrates to Cicero, through Augustine and Aquinas, with cumulative proofs, that the human spirit is indestructible by death or sin, or any other power, and must live eternally in woe or bliss. And this dogma, at the revival of learning and religion, prevailed over all other theories. Ficinus restated it from the works of Plato; Cardinal Niphus defended it against the Aristotelian speculations of Pomponatius; and at length the Council of the Lateran confirmed it as an article of faith, rather than a mere philosophical tenet. Protestant writers also agreed with Romanists in maintaining it as a strictly revealed truth with theological arguments, such as, that the divine eternity is a guarantee of the continued existence of the soul; that the divine wisdom would be frustrated if it did not fulfill the end of its being and the promise of its powers; that the divine goodness could not consent to the extinction of its noblest hopes and yearnings; that the divine justice requires its future punishment or compensation; and, in a word, that the divine glory would be better illustrated by its immortality than by its destruction.

But with psychological speculation came more scientific arguments. The first class was the ontological, derived from the essential nature of the soul. Descartes, claiming that the Council of the Lateran had authorized such philosophical reasonings, offered to prove to the Sorbonne, that the dogma of immortality could be deduced from his definition of the soul, as a spiritual essence, wholly distinct from the body, and not doomed to perish with it like the brutes, which are but machines, without souls. Leibnitz also assumed human immortality in his metaphysics, but without demonstrating it. George Frederick Meier, of the Leibnitzian school, in his "Proof that the Soul lives Eternally," besides inferring its survival after death from its spirituality and persistence, also argued on the

principles of the Monadology and Theodicea, that each finite spirit, by conceiving and reflecting the Divine Spirit, or absolute monad, participates in His eternal nature and becomes essential to His glory. Moses Mendelssohn, the hero of Lessing and Gœthe, in his "Phædon," combining Plato with Leibnitz, eloquently maintained the absolute simplicity, the invariable identity, and the metaphysical unity of the thinking monad, as well as its imperishable union with God as the crowning miracle and mirror of His whole creation. And similar arguments for the so-called natural immortality of the soul were urged, in numerous treatises, by the English spiritualists, such as Henry More, Norris, Whitby, Clark, Collier and Baxter. Another class of proofs was the teleological, derived from the obvious design of the soul. Pascal had led the way to such reasoning with his terse logic, "If man is not made for God, why is he only happy in God?" Reimarus, more philosophically applying the Leibnitzian axiom of the sufficient reason, argued that the immortality of the rational soul is necessary in a natural economy containing nothing useless or aimless; that if its yearnings for knowledge and blessedness hereafter are not to be fulfilled, it is but a contradiction and failure worse than the beasts; that the present disproportion between its merits and rewards demands a future reparation; and that as nature finds its chief end in man, so man must find his chief end in God, the only worthy object and consummation of his best desires. Rousseau included among the few religious sentiments of his Savoyard Vicar the immortality of the soul as a deduction from its moral responsibility, in contrast with the distressing inequalities of the present social condition. Kant, consistently rejecting the arguments of Mendelssohn and favoring those of Reimarus and Rousseau, denied that the mere essential, identical and incorruptible nature of the soul can be proved, but simply claimed its future continuance as a postulate of the pure, practical reason, which requires infinite duration for the progressive coincidence of the will with the moral law. And similar arguments were advanced by the English moralists, such as Herbert, Shaftesbury and Morgan. A still remaining class of proofs was the analogical, derived from the general

analogy of nature. The disciples of Wolf and the earlier rationalists, in addition to the above reasonings, had argued analogically that as in nature there is no annihilation, but only perpetual renewal of life from death, of flowers from seeds, and of butterflies from worms, so man, by no more wondrous metamorphosis, may be born into a future state and find himself in new moral as well as physical relations to other worlds and their inhabitants. Bishop Butler, in his celebrated "Analogy of Religion and Nature," pursued the same argument with logical rigor, reasoning inductively from universal experience that living creatures pass through different forms and states without losing their identity; that we ourselves every seven, ten or twenty years shed the atoms and entire organism of our bodies, and sometimes even part with particular organs; that the mind, in its acts of reason, memory and affection, subsists independently of the body, and often in mortal diseases grows more vigorous as the body languishes; and that death itself, instead of being like a sleep, is rather like a second birth into a new social state as natural, as free from miracle or catastrophe, in the view of higher intelligences, as the cosmical system with which we are now acquainted. Swedenborg, however, with his doctrine of correspondences, carried such analogism to the utmost limit, by imagining that the soul at death only casts off the body as an outer rind or chrysalis, and immediately emerges into a spiritual world so like that which she has left, that she will be ashamed of her previous ignorance, and soon be able to find a congenial heaven or hell, which shall only reflect, with new combinations, such scenery and employments as are already known and familiar. To all these proofs has lately been added a novel class, derived from modern metaphysical and physical speculations. The theistic disciples of Hegel, such as Göschel, Weisse, and Fichte, have argued for the survival of the individual soul from its own indestructible rational essence, and from its participation in the development of the Absolute Reason. And some recent scientists, such as Rudolf Wagner, and Figuier, in his "Future Life according to Science" have sought to connect the spiritual substance with the universal ether which pervades all gross matter, surrounding the

earth with a stratum of etherial souls (the latest products of the terrestrial development) and concentrated in the sun as a mass of pure spirits, whose rays kindle all the germs of vegetable and animal life upon the planets.

According to the mortalists, however, the soul is essentially mortal. And the opinion, though not as prevalent as its opposite, has scarcely ever been without advocates. It had been held by Epicurus that the soul, being material, is resolved at death into its constituent atoms, and by Aristotle that through its implication with the body it becomes perishable; and some of the earlier fathers, Justin, Arnobius, and Lactantius, had taught that its immortality could not be proved by the Platonic arguments, but is only secured by divine grace. During the middle ages the controversy concerning it between the Thomists and Scotists turned upon the question whether it is a truth of revelation alone or also of reason. At the revival of letters in Italy, the two Aristotelian schools, the Averroists and the Alexandrists, agreed in denying individual immortality; the former maintaining that the universal mind of the race alone is immortal, and the latter identifying that mind with the divine mind or soul of the world. Pomponatius, the chief of the latter school, brought the controversy to a crisis with a treatise on the Immortality of the Soul, in which he argued that the particular intellect only reflects the universal in time and space, and under sensible images; that it must perish with the bodily organs through which it is exercised; and that true virtue is practiced without regard to an imaginary future self-interest. But after both Catholics and Protestants authoritatively defined the doctrine, such speculations disappeared, and only by degrees have returned in more or less scientific forms.

The first of these views was known as psychopannychism, or the total sleep of the soul. Christian sects in Germany and England, probably recoiling from the doctrine of purgatory, revived in a popular form the ancient opinion based upon the scriptural and classical analogy between death and sleep, that while the body rests in the grave the soul remains unconscious until awaked by the trump of the resurrection. Certain divines also, Heyn, Wettstein, and Reinhard, seem to have

held that the shock of dissolution produces unconsciousness, or leaves the soul in a state of depressed activity, like the languor of repose or a dreamless slumber. Priestly endeavored still more philosophically to identify the resurrection of the body as an awakening of the material soul from death, as his chosen epitaph still indicates. The materialists of the French revolution at length precipitated the logical consequences of the theory by proclaiming in their very cemeteries that death is an eternal sleep. And the most varied religious applications of it, as we shall see, have been made by different writers, such as Socinus, Bonnet, Olshausen, and Whately. A more pronounced form of mortalism was that of the soul's dissolution as a consequence of its materiality. Henry Taylor, in his "Search after Souls," and in various controversial essays against Bentley, Manlove, and Broughton, maintained the inseparable and extinguishable nature of the soul with materialistic arguments. Dr. William Coward entered the controversy with his "Second Thoughts concerning the Human Soul," designed to prove from its perishable substance that it must disappear with the body, and can only be immortalized by divine power. Anthony Collins subsequently took the same position, in his discussion with Samuel Clarke, as a philosophical tenet to be maintained on purely psychological grounds. And after such divines as Dodwell, Bold and Perronet had associated it with the most peculiar dogmas of the Church, it was driven to the very opposite extreme as a doctrine of eternal death, by such materialists as La Mettrie and D'Holbach. But the modern form of mortalism has been that of the soul's re-absorption in nature as a lost individuality or expended force. The pantheistic idealists, such as Blasche, Michelet, Rosencranz, hold to an immortality so-called, which is but a virtual extinction of human personality, by the supposed return at death of the finite ego or consciousness, into the infinite ego or consciousness; in other words, the annihilation of man in God. Dr. Alger, in his "Doctrine of the Future Life," examines the views of Drossbach and Widenmann, who maintain, that the human monad or individual soul ever survives and endures through death and all other changes, but with a loss of consciousness or of memory.

And the later German materialists, such as Feuerbach, Moleschott and Büchner, supposing that personality itself is but the product of organized atoms or forces, have reached the extreme of declaring that consciousness, mind and will, all are dissolved with those atoms and forces and forever lost in the circling powers of nature.

And now we seem entering the last separative stage, in which the whole biblical psychology is to be set aside as of no scientific authority or philosophical value. The forerunners of the science, like Descartes and Hartley, strove to find a Scriptural warrant for their spiritualistic or materialistic speculations, and some of the recent leaders of the science, like Carpenter and Lotze, do not deny the province of revelation in regard to many psychological questions. But a school is now emerging, composed partly of professed psychologists, but mainly of amateur recruits from other sciences, who either ignore the whole Scripture doctrine of the soul or would erect their own crude hypotheses in its stead. Professor Bain of Aberdeen has written elaborate volumes on "The Senses, the Emotions and the Will," in which he has perfectly succeeded in excluding all direct allusions of a biblical or even religious nature. Dr. Maudsley, who can quote Scripture for a purpose, in his acute treatises, refers the origin of mind or mental force to the inscrutable Power which impels evolution throughout nature, and admits a miraculous revelation from that Power to be conceivable, but evidently does not look for any light from such a quarter, upon the otherwise insoluble problems of psychology. Dr. Bence Jones, in his "Croonian Lectures on Matter and Force," has explicitly affirmed that the Biblical account of the constitution of man is not to be allowed any scientific authority whatever. Professor Tyndall, in his famous Belfast address, would seem inclined to make Bishop Butler as non-committal as himself in regard to the whole nature, origin and destiny of the soul, but the chapter cited is a masterly argument for our immortality, from spiritualistic as well as materialistic premises, and the rest of the treatise is a hitherto unanswered course of strictly scientific reasoning in favor of divine revelation as a supernatural source of knowledge in regions not naturally discoverable by reason and ex-

perience. Professor Huxley also, in several scientific papers, has exhibited the automatism of Descartes, aside from his Scriptural spiritualism, and the determinism of Edwards, apart from his Biblical theism, and consistently with his own scientific creed, has protested that if some great Power would agree to make him always think what is true and do what is right, on condition of being turned into a sort of clock and wound up every morning before he got out of bed, he would instantly close with the offer. And John Stuart Mill may be said to have pushed such schismatic psychology into the practical sphere when, in his treatise on "Liberty," he ranked the Meditations of Antoninus with the Beatitudes of Christ, and declared his belief that other ethics than any which can be evolved from distinctively Christian sources, must exist side by side with the Christian ethics, to produce the moral regeneration of mankind.

On the revealed side of the same science, however, may be traced like stages of divergence from the rational theory of the soul. In the first stage there was a speedy disappearance of the false scientific psychology of the mediæval schools. It was the time when the cumbrous logic and metaphysics, which had become entangled with the whole system of divinity, were falling under the blows of the Reformation, and the great divines of the age, with rare acuteness, were exploring anew the psychological foundations of all the peculiar doctrines of grace. Luther, in his usual vehement tone, denounced Aristotle as that actor who, with his Greek mask, had been so long playing on the stage of the Church, and declared it his greatest cross to be forced to see fine minds, intended for all good studies, spending their lives in such pursuits. Melancthon, though he retained somewhat of the system of Aristotle, carefully subordinated it to revelation, and wrote a "Treatise on the Soul," expressly designed to free the science from scholastic conceits. Turrettin, in his Institutes, studiously distinguished the question of free-will as it should be discussed in Christian schools, without the conceits of the Greek and Latin fathers. At the same time, other theologians, of more scientific tastes, were seeking to conserve all that was still true in the old psychology, together with the new. Father Gassen-

di led the way for Priestly in speculations, which may yet appear as the crude beginnings of a sound Christian materialism. Father Malebranche agreed with Berkeley in maintaining that true spiritualism which underlies the whole biblical psychology. Bishop Butler, in his Sermons on Human Nature and Dissertation on Virtue, not only pressed the ethics of Shaftesbury into the service of religion, but laid the ample foundations of man's responsibility, with equal firmness, in the theories of prudence, of benevolence and of rectitude. At length Jonathan Edwards, by his masterly treatise on the Freedom of the Will, cleared away the rubbish of all former speculations upon that long-vexed question, and revealed a scientific basis for the most trying paradoxes of the Christian Faith. And since then many other thoughtful divines, such as Reid, Stewart and Chalmers, Tappan, Whedon and Hodge, and Wuttke, Delitzsch and Ulrici, have been vigorously re-constructing the whole Scripture doctrine of the soul in its true relations to the body.

All this time, however, the great mass of modern theologians have adhered to the traditional dogmas concerning the creation, regeneration and glorification of the human spirit, with little or no care for any scientific inquiries into its origin, conduct and destiny. As to the first of these dogmas, it was still generally maintained that the soul, as a separate substance, is not generated by the parents, but immediately created by God. Justin Martyr and Origen had, indeed, favored a Platonic view of the pre-existence of the soul, referring its miseries in the present body to its sins in a former state; and Tertullian and Gregory of Nyssa had gone to the other extreme of traducianism, or the notion of a physical propagation of the soul from parent to child, as more consistent with the doctrine of original depravity. But at length throughout both the Greek and Latin Churches traducianism had been supplanted by creationism, as the only orthodox opinion. Lactantius, borrowing the sentiment from Lucretius, that we are all the celestial offspring of the same Father, declared that only mortals could be generated by mortals, and cited against traducianism the intellectual prodigies born of stupid parents. St. Jerome went so far as to describe the birth of any human

being as an incarnation, wanting only the special miracles of the nativity of Christ. Augustine, while refraining from speculations upon the origin of the soul, maintained its distinct creation in Adam, if not in each of his descendants. The scholastic divines, still more precisely, defined creationism against traducianism. Thomas Aquinas, though granting that the so-called sensitive soul might be physically derived in the likeness of the parent, maintained that the intellectual or rational soul could only be created directly in the image of God. Hugh of St. Victor declared it to be the Catholic faith that the souls associated with living bodies had been made of nothing, rather than propagated in a carnal manner. And Peter Lombard unequivocally maintained that all souls since Adam were created in the body by direct infusion of God. At the Reformation the Lutheran divines reverted to traducianism, while the Reformed theologians, with the Roman doctors, re-affirmed creationism. Luther, Gerhard and Hollazius held that the souls of those descended from Adam and Eve had neither been created nor generated, but propagated with a moral taint of original sin. But Calvin, Beza and Turrettin, as creationists, maintained that there could have been no moral contagion in mere flesh or in mere spirit, the guilt of Adam having been imputed to his posterity by just ordinance of God. At the same time, both classes were inclined to treat the mode of the production of the soul, whether by creation or by propagation, as an inscrutable mystery, upon which the existing psychology and physiology had not yet begun to shed any light.

As to the dogma of regeneration, it was still generally held that the soul is born again and renewed by a supernatural act of the Holy Spirit. The early Church Fathers had, indeed, sometimes understood by regeneration the mere baptism of a proselyte from the Jewish or Pagan faith, and always strictly insisted upon the freedom of the will, even in the moral renovation which the term now implies. St. Clement, not only attached a mysterious grace to baptism, but declared that for man to strive for holiness beyond his own power, would be as absurd as to expect a horse to plough or an ox to serve for riding. Origen, though he saw a more symbolical meaning in

baptism, held to no such regeneration as would obliterate the free-will and make God the judge of natural faculties rather than of voluntary actions. Tertullian, too, attributed the most extraordinary virtues to the baptismal water, as both a natural and Scriptural emblem, while he denounced any doctrine of moral inability which would leave man, the destined lord of creation, such a slave that he could not reign over himself. But after these opinions had been pushed to their logical extreme by Gregory and by Pelagius, the orthodox faith was defined by Augustine, who taught that the regenerative grace communicated in baptism effaces the stain of original sin, liberates the enslaved will and quickens into new life all the powers of the soul. The scholastics then refined upon the doctrine with endless subtlety. St. Thomas Aquinas and Peter Lombard held not only that the baptismal grace regenerates the soul in both infants and adults, but also that it secures the pardon of past sins, with power thereafter to perform virtuous actions. The mystics, Bonaventura and Tauler, glowingly depicted the new life of the regenerate soul, through its degrees of purification, enlightenment, perfection and final absorption in Deity. And gradually, as the practical fruit of such opinions, there grew up the notion of supererogatory works of merit, the sale of indulgences and other abuses which led to the Reformation. But since that time, the mass of Protestant authorities, with the exception of Anglican divines, have distinguished regeneration from baptism and re-defined it as a spiritual, though supernatural renovation, having no invariable connection with that sacrament. The early Lutheran and Calvinistic theologians, indeed, seem to have made it almost synonymous with conversion, and included in it even the external divine acts of the justification, adoption and sanctification of the soul, together with their effects, as expressed in faith, repentance and good works; in a word, the whole process of restoring the divine image in man. Later divines, however, became more discriminating and precise. The Lutheran symbols described regeneration as a renewal of heart, mind and will, in which the soul is as passively subject to the operation of the Holy Spirit as a dead man before he is quickened into life, though it may afterwards co-operate with that

Divine agent in all gracious works. The Westminster Standards still more explicitly taught that the mind is enlightened, the will determined and the whole heart changed, not by mere moral suasion, as through the influence of truth, but by Almighty power or irresistible grace. At the same time, orthodox divines were agreed that this new-birth changes neither the substance nor the faculties of the soul, but is simply to be treated as an inscrutable mystery, which no psychological science could gainsay or explain.

As to the dogma of the resurrection, it was universally held that the perfected soul, after the separate state, will be reunited to its glorified body. The Church fathers had taught a literal resurrection of the same flesh. Origen, Basil and Gregory of Nazianzum had, indeed, explained the immortality of the disembodied soul and magnified the difference between the body celestial and the body terrestrial, likening the latter to the goat-skins with which our first parents clad themselves after their fall. But Justin Martyr argued that the same corporeal members, including the most carnal, having been made instruments of sin or of righteousness, must participate in the future rewards and punishments, and that even cripples could only be miraculously restored in the resurrection, like the man with the withered hand in the Gospel. Tertullian so far identified the body with the soul as an essential part of the divine image, that he anticipated for its several organs higher spiritual uses, as the mouth now serves not only for eating, but for praising God. St. Jerome still more grossly described the resurrection body as composed of blood, tissues, bones, all the present organs, even the teeth, which the condemned shall gnash, and the very hairs, which are all numbered. At length Augustine defined the doctrine against both extremes of the Greek and Latin fathers by consigning the soul to a separate state of purification, termed purgatory, and reserving for it a future body, substantially like the present, but free from its defects, impurities and distinctions of age, sex and stature. The scholastic doctors proceeded to indulge in the most fantastic speculations upon these opinions. Thomas Aquinas taught that wicked souls in purgatory suffered from literal fire, while the righteous passed immediately into beatific rest

until they should receive new bodies, derived only from the substance possessed at death, in the prime of their vigor, with refined senses and organs, swift in movement and glorious in aspect, but invisible to mortal eyes. Peter Lombard, though refraining from such subtleties, distinctly enunciated the dogma that the prayers and alms of the faithful avail for the release of souls from purgatory, and even that in this matter the rich have advantages over the poor. Gregory the Great, upon this doctrinal basis, at length organized the tremendous system of masses and penances, by which the Church enforced its claim to hold the keys of heaven and hell. The most saintly mystics, such as Bonaventura and Hugh St. Victor, brooded in devout reverie over the raptures of paradise and the torments of purgatory; the great poets and artists, such as Dante and Michael Angelo, depicted them in vivid imagery; and all Christendom trembled in view of them, as ever on the brink of unspeakable bliss or woe. With the downfall of these superstitions came the Protestant attempts to reconstruct the true doctrine of immortality and the resurrection. The Lutheran formulas did not at first distinguish between the happiness of the soul in the separate state, and the more complete happiness it attains through the resurrection of the body, but simply taught that at the coming of Christ in judgment, all the dead shall be revived, the pious elect receiving eternal life and joy, while impious men and devils are condemned to everlasting torment. The Church of England, in her beautiful liturgy, speaks of the departed spirits of the just as delivered from their earthly prisons, freed from the burden of the flesh, and ever dwelling with God in perpetual joy and felicity, until in the general resurrection they shall receive again their bodies, made pure and incorruptible. Jeremy Taylor and some later divines described the intermediate state as a Paradise, distinct from the heaven of the blessed, and a receptacle of holy souls, made illustrious with the visitation of angels. The Westminster standards, more dogmatically but not less poetically, declared that the souls of believers are, at their death, made perfect in holiness and do immediately pass into glory, while their bodies, being still united to Christ, do rest in their graves until the resurrection. But all orthodox di-

vines alike refrained from precise definitions of the resurrection body, more especially as the existing physiology had shown no power of elucidating such future mysteries.

But now, in the third separative stage, we behold a biblical psychology, which seeks to detach itself wholly from all the discoveries and theories of mental science and repudiate them as of no doctrinal interest or didactic value. Many intelligent divines, it is true, cannot but perceive its preliminary and fundamental importance. The most representative divine of the age, Dr. Hodge, in the anthropological part of his Systematic Theology, distinctly admits that every theologian must include in his system some theory of the will, as predetermining his theology and measurably his religion; and he has himself endeavored to converge all the light of modern psychology and physiology upon the dogmas of regeneration and resurrection. Others, however, would seem to have tacitly assumed the psychological theories, traditionally involved in their creed or Church confession, as being of Scriptural origin, though not revealed with metaphysical exactness, very much as the Copernican astronomy was once identified with orthodoxy, and consequently ignore any more recent results of mental science inconsistent with them. But still others, who accept such results, make no use of them in defending and illustrating the true psychology of the Scriptures. Though St. Paul referred depravity to the perverted action of mental laws and described the resurrection as a natural metamorphosis, and though the Scriptures everywhere, by precept and example, enforce all the humane virtues, as well as godly graces, which should have place in the true Christian ethics, yet they treat the various mental and moral sciences as mere branches of secular or profane learning; and at a time when the non-Christian votaries of these sciences are quoting Scripture as often as it can serve their own purpose and masquerading in the very garb of orthodoxy, they continue to represent the peculiar doctrines of grace as but so many abnormal miracles or anomalous mysteries, intended for the trial of our faith.

And thus psychology, the science of the noblest part of our nature, if it is to be torn asunder by the indifferent spirit, instead of transfiguring both body and soul, would but blend

the crass materialism of Tertullian with the ascetic spiritualism of Pascal, or abandon us to the morals of Seneca and the fate of Lucretius.

The Schism in Sociology.

In sociology, also, the two antagonists have been fast verging into a sort of permanent armistice.

On the rational side of the science may be traced the three stages of departure from the revealed doctrine of society. In the first and legitimate stage occurred the great political revolt from a false theocracy, from the pretended Vicar of Christ at Rome. It was the critical epoch when the State was asserting its independence of the Church, and everywhere far-seeing patriots and philanthropists were opening the paths of freedom and progress. As early as the twelfth century, Arnold of Brescia, the pupil of Abelard and proto-martyr of civil liberty, had perished in the vain attempt to create at the capitol of Christendom an ideal republic, which should sequestrate the wealth of the Church for the good of the people. Sir Thomas More, three centuries afterward, an advocate of tolerance, liberty and equality, while despotism still reigned throughout Europe, had dreamed of his "Utopia," the first of those new Platonic commonwealths which sanguine spirits, like Campanella and Harrington, have ever since been projecting as the brilliant goal of the social development. John Bodin, whose "Republic" was a marvel of his age, had traversed nearly the whole range of political science, and even anticipated Montesquieu in connecting civil history with geography by referring national character and institutions to the influence of race and climate. Montesquieu himself, in his great work "The Spirit of Laws," for the first time traced the rationale of all governments, institutions and customs with that nice historical dissection which was afterwards so happily described by Guizot and De Tocqueville as a species of political anatomy. Victoria, Ayala and Gentilis, as professors of ecclesiastical, military and civil law, had collected those precedents and problems of public ethics which were yet to be more philosophically treated. Hugo Grotius of Holland, the founder of international jurisprudence, in his renowned treatise "On the

Rights of Peace and War," then proceeded to lay the foundations of universal justice in reason and experience by citing the opinions of philosophers, historians, poets, orators, together with prophets and apostles, as in a grand Amphyctionic council of nations. John Baptiste Vico of Florence, the father of the philosophy of history, as a disciple of Bacon and Grotius, announcing his "New Science of a Common Nature of Nations," exhibited for the first time, by an historical induction, the career of States as proceeding under periodic laws. Robert James Turgot, who began as prior of the Sorbonne and ended as minister of state at the summit of the Revolution, in his discourse on "The Successive Advances of the Human Mind," enriched historical science with those additional ideas of social progression and perfectibility, which were afterwards matured by Condorcet, Dove and Comte. Adam Smith, the father of political economy, gave the first check to legislative interference with the laws of trade, by drawing attention to labor as the source of opulence, and the power of capital in developing industry, while St. Simon and Fourier broached the first crude notion of a self-adjusting harmonism of social interests and passions. Gotthold Ephraim Lessing, ascending above the physical and intellectual into the religious sphere, by his suggestive treatise on "The Education of the Human Race," raised the high problem of the relation of revelation to social progress and culture, which the genius of Schlegel and Buchez has not yet solved. Meanwhile, too, were rising in England, France and Germany those schools of civil historiography, founded by Gibbon, De Thou and Schlözer, which have since been adorned by Hallam and Grote, Guizot and Thierry, Niebuhr and Mommsen, and which, though more erudite and literary than philosophical, were destined to serve as the museums or collections of materials for the students of a stricter historical and social science. At length Herder, the father of universal history, with rare catholic genius, combining all human interests, art, science, politics, religion, in his magnificent fragment, "Ideas toward a Philosophy of the History of Mankind," essayed to trace the entire development of the race, from its origin to its destiny, as one necessary march of law and reason. And ever since

then a host of historians, statesmen, economists, statisticians and philosophers, the mention of whom would crowd the page with brilliant names, has been engaged, more or less directly, upon the scientific study of human society as a complex organism, regulated by physical and psychical laws.

During all this time, however, in the second separative stage, arose various hypotheses, more or less scientific, concerning the origin, the progress and the destiny of civil society, of the State, treated as a social institute, distinct from the Church. As to the first of these problems, the origin of civil society, there were the two rival schools of legitimists and revolutionists. According to the former, civil government originates in divine right. It had been the express teaching of the early fathers, such as Justin, Polycarp, Chrysostom, that emperors and princes held their power from God, as His vicegerents, and were to be passively obeyed even when exercising that power as tyrannically as a Nero or a Diocletian, in persecuting the Christians. And this dogma, though overshadowed by the papal supremacy during the Middle Ages, was revived by various parties, Catholic, Protestant and Infidel, amid the social upheavals of the Reformation, and re-cast into the forms of a political theory. By one party, from religious rather than political motives, the divine right of civil rulers was derived mediately from the people as a sacred trust. Cardinal Bellarmin, in his great work on "The Supremacy of the Sovereign Pontiff over Temporal Affairs," adopting the scholastic distinctions, maintained that popes alone received their authority directly from God, while civil rulers received theirs indirectly through the consent of their peoples, who were originally created with a capacity for monarchy, aristocracy or democracy, according to their circumstances and opinions. Francis Suarez, the Spanish Jesuit, published a "Defence of the Faith against the Anglican Sect and the most serene king James," in which he also argued the indirect origin of civil as distinguished from ecclesiastical power, and even asserted the paramount right of the Roman Pontiff to depose and execute heretical princes, with the consequent right of their subjects to resist them by force. Father Mariana, another famous Jesuit, in a work "On the Regal Institution,"

through his zeal for the papacy against royalty, astutely distinguished between a king and a tyrant, and went so far as to justify tyrannicide or political assassination as an original right of the persecuted citizen. And to the same party belonged those Protestant writers who accepted monarchy or aristocracy as a divine institution, subordinate to the Church.

By another, bolder party, the divine right of civil rulers was derived immediately from Heaven as a direct commission. Bossuet, in his "Defence of the Gallican Church," held the French sovereign, in his temporal capacity, to be absolutely independent both of the pope and of the people, and stigmatized papal interference as usurpation and popular rebellion as mortal sin, oppressed Christians being but as sheep in the power of wolves. King Louis XIV., claiming such divine right as his own, afterwards but expressed the theory of his courtiers in the proud assertion, "I am the State." James I. of England, whose pedantic "Defence of Kings" was aimed at Bellarmin and provoked the reply of Suarez, told his Parliament that the privileges of legislatures were pure concessions from the bounty of monarchs. And with such parties, from opposite motives, agreed the French skeptics Montaigne, Charron and Bayle, and the English divines Taylor, Heylin and Usher.

At length, by another still more extreme party, the divine right of kings was derived from the family constitution, with a religious consecration. Bossuet had adduced such an argument from the very word "Abimelech," or father-king, as the title common to the Hebrew monarchs. The early English reformers inculcated submission to kings, as included in the decalogue under the command to obey parents, and later "Homilies" of the Church consigned political rebels to eternal perdition with Satan, leader of the first great rebellion. Sir Robert Filmer, whose "Patriarcha" became the manual of the school, maintained that all government was originally monarchical, being derived from the heads of families by primogeniture, or by delegation on failure of succession, and that a mixed or limited monarchy was unlawful, even unnatural, and could only issue in anarchy. The "Icon Basilike, or Portraiture of his Sacred Majesty in his Solitude and Suf-

ferings," attributed to king Charles himself, and pathetically said to have been written not with a pen, but a sceptre, caused that monarch to be all but adored as a royal martyr, whose death had been an unnatural crime, equivalent to parricide. Such extravagant notions of divine right may seem to have long since disappeared with the decline of absolute monarchy; but in our own day they have been revived in an aristocratic and theocratic form by those defenders of American slavery and polygamy, who have justified such institutions from the Scriptures, and even in a democratic form by zealous unionists, who sought to define secession dogmatically as a sin. It has thus ever been the tendency of extreme legitimism to clothe civil institutions with divine sanctions and prerogatives.

According to the revolutionists, however, civil society originated in a social contract. It had been the opinion of ancient philosophers, such as Plato, Cicero, and Seneca, that the first men in a wild state entered into government by mutual consent for the common welfare; and this speculation, after having been long displaced by the patristic doctrine of passive obedience, was partially revived by the schoolmen and later doctors, under Aquinas and John St. Mary, in the distinction between mediate and immediate divine right, and at length, amid the political revolutions following the Reformation, moulded by different classes of publicists into a scientific hypothesis. At the outset there was a class, who from political rather than religious motives, assailed the figment of immediate divine right. William Barclay, a Scottish professor of civil law in France, whose treatise on "The Power of the Pope in respect to Kings and Princes" drew an answer from Bellarmin, and a defence from the Parliament of Paris, was the first Catholic layman to resist that papal claim of supremacy and arbitration, which convulsed the kingdoms of Europe until the peace of Westphalia. George Buchanan, jurist, poet and historian, as famous for applying the birch to his young pupil, king James, as for his subsequent treatise against the "Rights of Royalty," issued the slogan which was echoed and re-echoed through the British Islands, until their settlement in a constitutional monarchy under William of

Nassau. Milton, by order of Parliament, produced "Iconoclastes," or Image-breaker, as an offset to Icon Basilike, and at the same time defended the people of England against Salmasius, the champion of the royalists on the continent. Algernon Sidney, with his ponderous "Discourses on Government," demolished the last remnants of that patriarchal theory which for generations had invested absolute monarchy with the charms of romance, as well as the sanctions of nature and of religion.

Then followed a class of speculative publicists, who instead of the right divine, held to an original compact between ruler and people. Grotius, Puffendorf, Cumberland, and numerous other writers, had already referred political institutions and laws to the natural sociableness of mankind, and Hooker and Selden had even based the authority of kings upon the consent of their subjects, though without drawing the logical consequences. John Locke, in his celebrated "Treatise on Government," after refuting Filmer on rational as well as scriptural grounds, then argued that all civil power was originally a pure concession of the people, and enunciated that principle of representative legislation, which, though it failed to take root immediately in the wilds of Carolina, was destined to dissolve and restate political compacts throughout America and Europe. Jefferson, Adams, and Hamilton, with their compatriots, only formulated and applied such opinions, when they declared it to be self-evident that all men are born free and equal, and proceeded to dissolve the political bands which connected them with the English monarchy, and to constitute a new government on the basis of the popular will alone.

But in the end, there appeared a class of revolutionists assailing the divine right of the family, of property, and of the whole social order. Machiavelli, Spinoza, and Hobbes had already represented all civil government as having originated in brute force, rather than right and reason. Morelli and Mably, French political writers in the eighteenth century, had included the passions and instincts as legitimate rights in the code of nature, insinuated doubts upon the existing moral order, and advocated Spartan and agrarian principles of legisla-

tion. Rousseau, the herald of the revolution, in his "Social Contract," among other reckless paradoxes, ridiculed all civil power as no more divine than the pistol of the highwayman, and described even representative government as an abridgment of natural liberty; indeed all civilization as but a complex usurpation of the original rights of man. Brissot of Warville, the incendiary of the reign of terror, applying the doctrines of Mably and La Mettrie in a violent pamphlet, proclaimed to the populace that marriage was mere slavery, property but robbery, and the savage the only legitimate state of society. And Mirabeau, Robespierre, St. Just and their accomplices in the Assembly simply precipitated the anarchy in which they were themselves overwhelmed, when they converted such doctrines into decrees issuing in general pillage, lust and bloodshed. In our own times somewhat similar opinions have been peacefully revived in a more scientific form by St. Simon, Fourier and Owen, and in a political form by Cabet, Louis Blanc and Proudhon.

As to the second problem, the growth or progress of civil society, there were also two rival schools, the libertarian and the necessitarian, or the pragmatic and the inductive historians. The former would refer all social events to mere will, divine or human. It had been the habit of ecclesiastical historians, from the days of Eusebius and Theodorus, to assume Providence as the chief agent in history and the Church as a special factor, to which all accompanying civilization was but tributary. And the early historiographers, accepting this as the only scientific treatment of social phenomena, simply exhibited civil history, in connection with ecclesiastical, as in a sort of divine drama or plan of Providence. Bossuet, in his eloquent "Discourse," depicted the rise and fall of Egypt, Assyria, Media, Persia, Greece and Rome as dependent upon the salient epochs of Jewish history and conspiring to the establishment of the Christian religion and the Catholic Church. Prideaux, in like manner, connected the History of the Jews with that of neighboring nations, from the time of the kings of Israel to the coming of Christ, leaving Schuckford and Russell to complete the connection of Sacred with Profane History, during the preceding periods from the time of the Creation. And the

same pragmatic, though devout spirit, has often been pushed, with questionable minuteness, into more recent history; as by Schomberg, whose "Theocratic Philosophy of English History" is but an attempt to explain the civil and military events of the State as so many special divine interpositions on behalf of the Church; and by the late Canon Kingsley, who represents the wars of the Teutons and Romans as managed by a General in Heaven, with the strategy of Providence.

By degrees, however, civil history was detached from ecclesiastical as a purely human drama or game of kings and statesmen. Dr. William Robertson, principal of Edinburgh University and leader of the moderate party in the Kirk, gave to the world Histories of Scotland, England and America, so secularized by romance and philosophy, so filled with ideal scenes and personages, that they appeared like stately dramas, and as such were in fact applauded by the great of his day. Hume, carrying the skepticism of his philosophy with him, wrote his partizan "History of England" with such entire suppression of the religious element that Alison, one of his most generous critics, declared it was like the play of Hamlet without the character of the Prince of Denmark. Gibbon, with still more ironical purpose, in his famous chapters on the rise and spread of Christianity, may be said to have completed the secularizing process by laboring to reduce that great miracle of history to a mere ordinary product of human causes and motives. And the same spirit, to an infidel extreme, displayed itself in the historical writings of Voltaire and Volney.

Another still stronger pragmatic tendency has been that of concentrating the significance of history in great men as the conspicuous figures in the Providential drama or the prime movers of civilization. Cousin, in his brilliant lectures on history, whilst admitting other social factors, exalts above them the series of warriors, statesmen, poets, artists, thinkers, as the exponents of whole nations and epochs, summing up humanity as humanity itself sums up nature, and swaying the world as divine instruments whose title is success, whose reward is glory. Carlyle has made the same doctrine popular in his "Heroes and Hero worship," and described the whole English Commonwealth as scarcely more than a Cromwelliad.

Emerson, in his essays on "Representative Men," with characteristic egoism, erects history into a sort of stage for the display of the Platos, the Shaksperes, the Napoleons, who have personified the different phases and epochs of humanity. And the biographical form, which so many popular histories assume, is a standing proof of the extent to which this pragmatic view of social phenomena prevails.

A more abstruse form of the same tendency, which has appeared in our day, is that of exhausting the import of history in certain great ideas or typical facts, and thus rendering it a mere vehicle of philosophy or supposed process of logic. The German idealists have proceeded on the principle that the science of history is not to be derived from history itself, but only illustrated by it as a theory of the world in all its possible epochs, which the philosopher has conceived independently of experience. According to Fichte, history is but the biography of the Absolute Ego from the infancy to the maturity of reason, through the five great epochs of instinct, authority, reflection, science and philosophy. According to Schelling, it is the self-evolution of the Absolute Mind, as revealed in humanity through the three periods of fate, of natural law, and of Providence. According to Hegel, who reduced history as well as nature to sheer logic, it is the human development of the Absolute Reason, the dialectic of nations, the great argument of successive civilizations, beginning in China, continuing in India, Egypt and Greece, and issuing in Germany as a complete triumph of art, religion and philosophy. Cousin, applying the Hegelian logic, found in all history, as the only possible phases of civilization, the three ideas and epochs of the infinite, the finite, and the relation between them, with their predetermining climates, the Asiatic, the Mediterranean and the European. The Italian positivist, Ferrari, in his "Essay on the Limits of the Philosophy of History," whilst advocating an ideal history to be generated from actual history, denies that actual history yields the ideal histories of Hegel and Cousin, since they would arbitrarily ignore or modify whole nations, epochs, and civilizations, according to logical pre-conceptions, and thus exhaust all human development in mere Hegelianism, the conceit of a single philosopher.

At length the pragmatic tendency has come to an extreme in writers who have declared a social science impossible, and made it the very design of history to emancipate free will from fixed laws. Professor Froude, in his essay on "The Science of History," has maintained that historical phenomena never repeat themselves, that natural causes are ever liable to be set aside by volition, and that consequently there can be no scientific explanation of what men have done or will do, and no experimental investigation of social facts. Professor Goldwin Smith, in his lectures on "The Study of History," has argued that the supposed social laws are precluded by human free-will and divine justice, that neither climate nor race determines the destiny of nations, that the very language of the sociologists is mere delusive metaphor, and that there could be no inductive theory or science of history until history was itself finished. M. Michelet, a disciple and critic of Vico, in his little work entitled "Introduction to Universal History," has described human progress as a continuous battle of man with nature, of liberty with fatality, proceeding from the eastern to the western nations, involving the gradual enfranchisement of religion, of science, of industry, and destined to issue in the universal triumph of individual freedom; according to the fine saying of Hegel, "The ancient world knew that one man was free, the king; the modern world knows that some men are free, certain classes; but the coming world will know that all men are free." To the same class Professor Flint, in his "Philosophy of History," has assigned M. Quinet, a disciple and critic of Herder, who, against the fatalism of his master, has maintained that human history is not mere natural history, an advanced region of physical law and development, but is to be distinguished as the domain of free will, and that so far as it has any course or plan or aim, it simply exhibits the ceaseless struggles of the personal reason against the dominion of nature and the tyranny of society, from land to land and from age to age, in search of the goal of absolute freedom. And thus the pragmatic spirit in history would end by exalting mere individual will over all natural and social law.

But the necessitarian or inductive school of civil historians

have sought to refer all social events to fixed laws of recurrence and progression. The idea had very early been broached by Greek and Roman philosophers, such as Ocellus and Florus, that nations, like individuals, are born, grow and die, to be replaced by others, in the same endless circle; and some of the Church fathers, such as Epiphanius and Augustine, advanced the additional conception of a Providential march of the human race towards a perfect state of society. Hugh of St. Victor and Aquinas recognized a progressive revelation with successive dispensations. Buchez tells us that in the fifteenth century St. John Climaque spoke of a human progressiveness, and that St. Vincent de Lérins maintained a necessary increase in human knowledge, from age to age, to be consistent with the constancy of the Divine word. But it was not until the spread of inductive research in the sixteenth century, that different sets of social phenomena, one after another, began to be treated with anything like scientific method and were referred to invariable laws.

The first class of these inquiries related simply to the political or civil development of society. Machiavelli, in his "Discourse on Titus Livy," reproducing Plato's theory of circular revolutions, had maintained that ancient Rome was only recurring in modern Italy, and on the basis of this induction described all nations as at first choosing their kings, then combining against them under their nobles, at length revolting from their nobles, then again choosing kings for themselves, and thus ever running through the same phases of monarchy, aristocracy and democracy. Vico, with a more scientific spirit, in his "New Science," generalizing Roman history into an ideal history, exhibited an inevitable career of states through the successive forms of theocracy, aristocracy and democracy, under corresponding impulses of piety, honor and justice, as at first pursued in Pagan Rome, then repeated in Christian Rome, and to be repeated in all nations, with ever widening circles, until each shall have reached the purest possible form of a republic. Boullanger, by means of a work entitled "Antiquity Unveiled," found also in all history successively, theocracy, aristocracy, democracy; the age of gods, the age of heroes, the age of mere men; but crowned the series with

monarchy instead of republicanism, maintaining that mediæval Catholicism was the expiring effort of theocracy, and that Europe, having been first savage, then pagan, then Christian, had at length become reasonable under the existing monarchy. Boulainvilliers, as a noble of the old regime, placed aristocracy at the summit of these various revolutions. And numerous other civil historians, such as Ferguson, Guizot and Thierry, have represented all European nations as pursuing the same political career through the ever returning circle of aristocracy, monarchy, democracy, so that any one of them might be taken as a model of the others.

Another class of inquiries included the physical as well as the political development of society. Bodin, the first to base political upon physical geography, divided nations into northern, southern and middle, attributing to the first the climatic qualities of physical strength and courage, to the second those of intellectual power and culture, and to the third more or less of both, according to their latitude in the temperate zone. Montesquieu, in his celebrated work, the "Spirit of Laws," treating man as a sort of political plant, moulded by climate and legislation, mapped the whole earth with its coexisting monarchies, aristocracies and democracies, as so many indigenous products of different continents and countries. C. A. Walckenaer, who wrote under the first French Republic an "Essay on the History of the Human Species," treating man as but the most perfect of the animal races, described him as impelled by his passions through six successive stages, the barbaric, the nomadic, the pastoral, the agricultural, the industrial, the decadent, from gross animality up to the highest material civilization, and back again to mere animality. The Abbé Frère, at a later period, in his "Principles of the Philosophy of History," taking the bodily development as a type of the social, divided the natural life of nations into seven ages, corresponding to the seven ages of man, infancy, boyhood, adolescence, youth, manhood, fecundity, maturity; described the physical organization of society during these periods; and even estimated their duration by the civil calendar as including each seven generations, or seven times thirty-one years. In our own day, the speculations of Walckenaer and Frere have

been pushed with more scientific rigor by the new school of anthropologists, whilst those of Bodin and Montesquieu have been more fully treated by Ritter and Guyot, and carried to the last extreme by Odysse Barot, who has maintained that all nationalities are factitious but those which are bounded by river basins and mountain ranges, and that the perpetual oscillation between the larger artificial and the smaller natural nationalities must at length cause the political map of Europe to settle into coincidence with the outlines of physical geography.

Another class of inquiries has embraced the higher intellectual development of society. Bacon had imbued his Advancement of Learning with the spirit of scientific progress, and Pascal had likened the human race to an individual never dying and always learning through successive ages. Turgot, in his "Plan of Universal History," then distinguished the life of humanity from that of plants and animals as involving an accumulating treasure of ideas from generation to generation, and proceeding through three great intellectual stages, first by referring phenomena to supernatural agents, then to secondary causes, and at last to mere natural laws. St. Simon described such stages as marked by synthetical and analytical processes, organical and critical epochs. Comte characterized the three stages of Turgot and St. Simon as theological, metaphysical and positive, and applied the law to a scale of the sciences which, under its operation, arrive at the positive state successively, in the order of their relative simplicity and generality. The late Henry T. Buckle, in his splendid fragment, the "History of Civilization in England," whilst exalting physical causes such as climate, race, food, soil and scenery, also maintained that human progress is determined by intellectual laws, by the accumulation and the diffusion of knowledge, rather than by any moral improvement, of which he could find no evidence, but rather the contrary, even in the most orthodox countries. More recently, Dr. Draper of New York, in his scientific "History of the Intellectual Development of Europe," proceeding by the inductive method of Vico, upon the physiological hypothesis of Frère, has generalized the individual as the social development and Greek history as an ideal

history, in accordance with which he has sketched European culture through the successive phases of an age of credulity in its infancy, of inquiry in its childhood, of faith in its youth, of reason in its manhood, towards a final age of decrepitude and death.

Another class of inquirers extended to the moral development of society. Butler had argued that virtue ever tends to predominate over vice in civilized communities. Kant, in his "Idea of a Universal History from a Cosmopolitan Point of View," distinctly maintained that ethical phenomena, the acts of free-will, are subordinate to general laws, under which the human race is advancing towards its only rational ideal in a universal republic of virtue and justice. Condorcet, whose "Picture of the Historic Progress of the Human Mind" was written amid the horrors of the French Revolution, heroically proclaimed the progressive perfectibility of society, while it was falling into ruins around him; and after sketching eight stages through which society has passed, from barbarism to civilization, deduced a consequent intellectual progress, which should bring with it such moral and even physical improvement, that crime would cease and men become immortal. Patrick Dove, a Scottish philosopher, advancing beyond Comte and Condorcet with Butler and Kant, in his "Theory of Human Progression," argued the rational probability of a reign of justice in the earth, as involved in the development and application of the moral and political sciences, following in the wake of the mental and physical sciences. Francis Charles Fourier, boldly anticipating such sober presages in his "Theory of the Four Movements," believed himself to have discovered great social laws in the normal working of individual passions and tendencies, acting and re-acting through successive stages of barbarism and civilization, toward a perfect state of absolute harmony between the public and private weal. And with more scientific rigor, M. Quètelet of Brussels, in his sagacious treatise on "The Social System and the Laws which Govern it," has endeavored, by statistical researches, to subject moral as well as physical facts, marriages, births, deaths, crimes, miseries, to fixed laws, under the operation of which society, like the individual, ever tends

to a gradual predominance of the spiritual over the animal nature.

Besides these inquiries, another class has ascended even to the religious development of society. Lessing, in his "Education of the Human Race," referring all revelation to an infantile and pupilage state of humanity, placed Judaism, Christianity, and other religions in connection, as but so many phases in the necessary march of mankind toward maturity and perfection. Pierre Leroux, the zealous expositor of St. Simon, in a treatise on "The Origin and Future of Humanity," by an erudite historical criticism has essayed to trace the issue of Judaism and Christianity in St. Simonism as their only legitimate sequel and complement. Comte, with a bolder generalization, sought to sketch the religious evolution of society through the phases of Fetichism, Polytheism, Monotheism, towards a Positivist Religion of Humanity, as the summit of his completed series of sciences. And numerous other comparative theologians, as we shall see, are studying the religious phenomena of different nations, races and civilizations, with the view of bringing them under general social laws.

But at length all these inquiries have been merged in comprehensive speculations embracing the entire development of society, physical, intellectual, moral and religious. Herder, with such amplitude of view, broached the magnificent scheme of a universal history which, starting with the earth as a planet among the stars, slowly forming for man, should include all human interests in all climes and through all ages, under one Providential plan of development. The French sociologists, St. Simon, Fourier and Comte, not only strove to identify their laws of social order and progress with the universal laws of gravity and attraction, as alike seen in the balancing of suns and planets in the heavens, and in the play of opinions and passions upon the earth, but also attempted to adjust the different phases of the whole human evolution, the intellectual as dependent upon the physical and the moral as dependent upon the intellectual, as in the individual organism. The recent German school of realists, following Herbart, have treated the science of history in a still more profound as well as comprehensive spirit. Professor Hermann Lotze, combining the ge-

nius of Herder and Leibnitz, has connected natural with human history, maintained the perfect consistency of free-will with physical and social laws, and sketched, as in a panoramic series, the entire intellectual, industrial, æsthetical, religious and political developments of mankind. Professor Conrad Hermann of Leipsic, in his "Philosophy of History," while asserting the reign of final causes in history, yet propounds, as its general law, the development of humanity through periods of childhood, youth, manhood and age, which are characterized respectively by art, religion, industry and science, and may be seen illustrated successively in the Grecian, Christian, English and German types of civilization. Professor Lazarus, with more subtle analysis, has been seeking to found sociology upon psychology, to identify the laws of social and mental life, by tracing the growth and condensation of ideas in history, as expressed by poets, sages, heroes and saints, and transmitted in art, science, politics and religion, with increasing facility and compactness, from generation to generation. Frederick Von Hellwald, treating the human species as a transient phenomenon of the earth, in the spirit of Darwin and Hæckel, has written an extensive "History of Culture" in all ages and nations, based upon the principle that the development of civilization is a purely natural process and, like any other, governed by natural laws. Professor Walter Bagehot, in his work styled "Physics and Politics," has endeavored to carry into the same field the new principles of natural selection and inheritance, as explaining the nervous or mental powers and products which are stored and propagated in the progress of civilization. But perhaps the most scientific as well as comprehensive sociology yet attempted, is that of Mr. Herbert Spencer, who has included human society under a general law of universal evolution, of advance from the homogeneous to the heterogeneous, which governs the whole knowable universe, from the primitive nebula up to the most highly organized commonwealth, the same in the globule as in the planet, in the embryo as in the nation, in the habits of insects as in the religions of peoples. And thus, at the extreme point of the inductive tendency in history, all free-will and Providence would seem to have vanished under the reign of law.

As to the third problem, the destiny of society, there have been also two rival schools, the reactionists and the progressionists, or the corruptionists and the perfectionists. According to the former, society is corruptible and ever deteriorating. The East for ages had been immobile and hopeless. Many Greek and Roman writers, from Ovid to Horace, had depicted history as a decline from a golden age, with increasing dissoluteness, towards anarchy and barbarism. Christian fathers and schoolmen, from Tertullian to Bernard, had looked upon all surrounding civilization as the mere waste scaffolding of the Church, about to be consumed in the fires of an impending judgment. And it was not strange that at the Reformation, and amid the political convulsions which followed it, these dogmatic views should sometimes darken the whole prospect of mankind. By large sects and parties, as we shall see, the temporal interests of society were wholly sacrificed to the eternal interests of the individual; earth was treated as a mere scene of trial for heaven, history as but a course of vindictive judgment upon depraved humanity, and time as only a brief respite for accomplishing the number of the elect.

But besides such strictly religious forebodings of a coming social ruin, there were others of a more political and scientific nature. Machiavelli, consistently with his theory, could only describe civil society as ever revolving between the extremes of anarchy and despotism, through epochs of probity and corruption, with no hope of advancing beyond the vicious circle. Bodin, though he read political progress in the past, could see none in the future, but rather disclaimed as alike visionary the Republic of Plato and the Utopia of More. Montesquieu, Gibbon, Ferguson and other historians, speculating upon the rise and fall of empires and civilizations, seem to have reached no more hopeful philosophy than that of the poet, as he mused amid the ivy-covered ruins of Rome:—

> There is one moral of all human tales,
> 'Tis but the same rehearsal of the past;
> First freedom and then glory—when that fails,
> Wealth, vice, corruption—barbarism at last.

Grotius, with the pagan Cicero, simply accepted war as a necessary evil, to be legalized and investigated, without any dreams of universal peace. An English clergyman, Robert Malthus, the founder of a school of political economy in opposition to Condorcet and Godwin, boldly formulated it as a law of Providence, susceptible of mathematical proof, that pauperism is an ever growing evil that can only be checked by such scourges as war, famine and pestilence, and unless precluded by celibacy, must tend to become universal. And in our day, writers abound who, more or less consciously, treat the crimes and miseries which threaten the institutions of the family, property and the whole social order, as so many incurable diseases in the body politic, with a prognosis of certain decay and death.

There have also been like forebodings of a general intellectual decline of society. At the time of the renaissance it was warmly argued by eager partizans, that the ancients far excelled the moderns in wisdom and knowledge, as it is still occasionally maintained that the lost arts and sciences would quite eclipse our own enlightened age. An opinion that in the long course of time there are certain ebbs and floods of the sciences, without any real progress, was ranked by Bacon as the chief obstacle to their advancement in his day. The reactionary critics of the French revolution, De Maistre, De Bonald, Chateaubriand, termed the history of philosophy nothing but a disgusting cycle of errors, treated Bacon and Descartes as mere charlatans, and maintained that there had been little or no real progress even in the physical sciences. And whole schools of philosophical thinkers are still insisting that the moral and political sciences, after ages of effort, continue stationary and circuitous; that the metaphysical sciences are sheer illusions; and, in fact, that all science is but doomed to expire in nescience.

Still more rigorous predictions have been based upon the supposed tendencies to a general physical decline of society. A scientific color has been sought for them, as we have seen, in the influence of disastrous climates, in the decay of degenerate races, in the natural mortality of nations, and in the gradual exhaustion of the earth itself. Ethnolo-

gists, such as Schoolcraft, Kennedy and Nott, can see no progressive future for the effete nations of the East, the enervated peoples of the South and the ice-bound tribes of the North. The Abbé Frère, consistently with his physiological law allotting to nations a natural term of life as fixed as the threescore years and ten of individuals, held that they could only be providentially carried beyond the stationary or decrepit state. David Ricardo, of the same dismal school with Malthus, took it as a principle of economic science, that as population increases, the poorer soils become occupied, the fertility of the richer soils diminishes, labor depreciates, and general impoverishment becomes inevitable. Professor Stanley Jevons has raised the alarm, that the coal-beds of England are inadequate to meet the coming wants of that country. Mr. Gregg, as a modern Cassandra, includes among his "Rocks Ahead," a gradual exhaustion of the material resources of nature, as well as a growing social degeneracy. And speculative geologists have predicted an ultimate state of the globe, when all civilization shall have perished under the glaciers of a universal winter.

At the same time, these different presages of the religious, moral, intellectual and physical decline of society have been combined and rendered systematic and imposing. The arts, sciences, polities, religions of successive civilizations, have been supposed to observe great cyclical laws of growth and decay as fixed as the succession of the seasons, the periods of human life, or the cosmic eras of planets, stars and galaxies. Fourier himself, though he assigned to the human race a perfect manhood of seventy thousand years, to be reached through the successive stages of Edenism, savagism, patriarchy, barbarism, civilization, described it as then declining through the same stages in an inverse order, until it should become extinguished with the earth, and the earth itself revert to the nebulous dust of the Milky Way. Ernest Von Lasaulx, applying the law of vitality, of birth and death, to nations as well as individuals, and to the race itself, with all its organic products, its arts, sciences, politics and religions, has maintained that society evolves its classes of peasant, soldier, priest and prince only to dissolve them again by the reverse process;

that after the heroes come the sages, after the doers the thinkers, after the artists the critics; and that already European civilization, though at its flower, gives signs of exhaustion and decline. Matthew Arnold, in some of his plaintive poems, is sighing over the same supposed decadence of modern culture. And Dr. Draper, extending with scientific rigor the law of intellectual development to societies as well as individuals, has described Greece as flourishing and decaying through its childhood, manhood and senility, Europe as just entering its mature epoch of reason, China as waning toward its decrepitude, and the earth itself as growing hoary with wisdom, only then to pass away in the succession of dissolving worlds, like a drop that sparkles in a summer cloud.

According to the progressionists and perfectionists, however, society is perfectible and ever improving. And it was no new opinion. The Western nations had long been restless and hopeful. In the Republic of Plato, and among the sentiments of Cicero and Seneca, had been broached many ideas of social advancement, political as well as moral and intellectual. The community of goods at Pentecost had been advocated by Epiphanius and Chrysostom, illustrated by the monastic orders and witnessing sects of the middle ages, and at the Reformation more or less rigorously applied by the Anabaptists of Germany and the Puritans of England. The Millenarians of the early and modern Church had been looking for a Messianic reign of peace, when the whole earth should become a paradise. And with such purely religious aspirations after social perfection also came dreams of moral and political improvement. Sir Thomas More, presenting to King Henry VIII. and Cardinal Wolsey a work in which he described England as an imaginary island named "Utopia," or No-where, had sketched his ideal commonwealth, which should equalize all classes, fortunes and manners under a patriarchal reign of frugality, innocence and peace. James Harrington, modelling his "Oceana" after the manner of Plato's Atlantis, had looked forward through the storm of the English revolution to the halcyon picture of a free republic, fairer than that of Venice, but which could only be attempted by his political descendants in the true Atlantis beyond the seas.

Morelli, the first of the French socialists, in his "Basiliade or Floating Island," had depicted, under a political allegory, that caricature community of goods, that abolition of property, rank and family, which was afterwards to be so terribly illustrated in the reign of terror. St. Simon then emerging from the American and French revolutions as a philosophical observer, with his proposed "Reorganization of European Society," announced the peaceful coming of such utopias, under his discovered law of organic and critical epochs, with the charms of liberty, equality and fraternity. Victor Considerant, the zealous interpreter of Fourier, in his "Social Destiny," has endeavored to show how individuals, if once released from existing false organizations, would spontaneously group themselves in little communities or phalansteries, under the law of passional attraction, with an absolute harmony of opinions and interests. Mr. Nordhoff has sketched such experiments as tried in different parts of the country. The red republican Cabet, transferring the utopia of More from the island to the continent by his imaginary "Travels in Icaria," has drawn a brilliant picture of modern French civilization, as transformed, from the smallest village up to the capitol, by the principles of Communism. And numerous other sounder philanthropists, from William Penn to Charles Sumner, assailing the wider evils of war, slavery and caste as but legalized crimes against civilization, have been predicting their ultimate extinction under the natural laws of trade, diplomacy and amity, by means of commercial leagues, peace societies and congresses of nations.

There have been still more sanguine dreams of intellectual as well as political progress and perfection. Campanella had imagined his "City of the Sun," whose inhabitants, living by intelligence, were devoted to the pursuit of philosophy and the sciences, whose chief magistrate was chosen over his rivals as the greatest metaphysician, with the title of Sun, and whose very marriages were scientifically assorted with a view to the intellectual perfection of the species. Bacon, in his "New Atlantis," had dreamed of a similar home of perfect science as the distant goal to a future advancement of learning, compared with which antiquity would seem but

the childhood of the world. Perrault, taking the part of the moderns against the ancients, had likened the apparent ebbs and floods of the arts and sciences to rivers, which plunge awhile under ground, only to emerge again with increased fullness and power. The progressive reformers of the French Revolution, Turgot, Condorcet and St. Simon, then traced the career of past philosophy, through successive intellectual stages, towards positive knowledge, hailed Bacon and Descartes as the heralds of a new era of enlightenment, and showed the perfection already attained in the physical sciences. And whole schools of philosophical mystics are claiming that they have completed the circle of the mental and moral sciences, that they have brought the metaphysical sciences within the grasp of their own consciousness, and, in short, have seized all science by a sort of intuitive omniscience.

There have been still bolder visions of a coming physical progress and perfection. Scientific data have been sought for them in the evidence of improving climates and species, in the survival of favored races and nations, and in the industrial development of the globe. Palæontologists have contrasted the present refined floras and faunas with the coarser organisms of the primeval earth. Ethnologists, such as Crawfurd, Tiedemann and Guyot, have dwelt upon the indestructible vitality of the Jewish blood, in contrast with the Egyptian, the Greek and the Roman; upon the increasing size and quality of the Anglo-Saxon brain, and upon the unprecedented mixture of races and climates in America, as tending to the development of a new and higher type of nationality. Political economists, like Henry Carey, reversing the dreary doctrines of Malthus and Ricardo, have maintained, with elaborate arguments and statistics, that superfecundity disappears as we ascend the animal and intellectual scale, that the poorer soils are exhausted before the richer, and that science and industry admit no limit to the means of subsistence. And more speculative socialists, such as Condorcet, St. Simon and Fourier, giving reins to their fancy, have looked forward to a time when the human body, through physiological skill, shall become practically immortal, when Homers and Newtons shall abound by the million, and when, under organized industry, the whole desert

earth shall have been reclaimed and transformed into a garden, and even the sea converted into a wholesome beverage.

At times, too, all these glowing prophecies of moral, intellectual and physical progress have been blended into one brilliant picture of human perfection. It has been argued that the arts, sciences, polities and religions of successive eras, instead of running in fatal cycles, are ever advancing, as under spiral laws of average progression, which still preserve and improve the species, though individuals live and die, though nations rise and fall, though mighty civilizations flourish and decay. Vico himself, while he saw only the same stages ever returning in history, seems to have admitted that, with each recurrence, they were enriched with nobler manners and laws, thus promising a future Italy as much better than the present as Christian Rome was better than Pagan. Pascal and Turgot not only distinguished the human species from the individuals which compose it, as knowing no birth or death, or childhood or age, but exalted it over those vegetable and animal races which only move in the same cycles, generation after generation, while it is ever progressing, through successive epochs and civilizations, with growing knowledge, wealth and power. Jouffroy, in much the same spirit, has ingeniously argued that this mobility, this progressiveness of humanity, is due to its intelligence, to the succession of ideas, as expressed by leading minds and instituted by the masses; that already the march of intelligence, the growth of ideas, can be discerned in the past career of mankind; and that of the three great civilizations now on the earth, the Christian is destined to prevail over the Mohammedan and the Brahminical, by virtue of its intellectual superiority and vigor, under the leadership of the foremost nations, England, Germany and France. Other writers, with as much patriotism as philanthropy, have dwelt upon the prospects of American civilization, starting with the accumulated advantages of the European, Asiatic and African civilizations, and resuming all climates, races, polities and religions. Butler even hinted long ago, as a strictly scientific conjecture, that reason tends to predominate over brute force, and virtue over vice, not only in some future state of society on earth, but throughout the universe, in distant

scenes and periods, where all pure intelligences shall have discovered each other and combined together under the laws of intellectual and moral affinity and progress. Numerous philosophers, too, from purely rational premises, have been arguing that it is the very tendency of civilization, as well as aim of history, to subdue the whole earth to the service of man, to free him from all physical as well as political tyranny, and to open before him an indefinite career of expansion and improvement. And certainly, if we carefully study the several material, intellectual, moral and religious developments of society, in their normal order and mutual dependence, it will not seem wholly visionary to project their combined issues in some remote epoch, when art shall have triumphed over nature, science over error, society over the individual, Providence over humanity, and earth shall be absorbed into heaven, as a star fades into the dawn.

At length, as the final result of the two separative processes which have been traced, we now find ourselves in that third stage of complete indifference, where the whole biblical sociology, the doctrines of Providence, of the Church and of the millennium are abandoned as of no scientific authority or value. Whilst great civilians, historians and philanthropists have claimed their hypotheses concerning the origin, course and destiny of society to be compatible with the teachings of Scripture, or have ignored such teachings simply from philosophical taste or prudence, a wing of the modern school is striving to exclude them as wholly unscientific, and even as obstructive to the true science of humanity. Comte, as the declared founder of sociology, maintained that until his day it had lingered in the theological or superstitious stage of scientific development, hampered by the notion of a Providence, very much as astronomy had been retarded by mythical archangels, and chemistry bewitched by infinitesimal spirits. Mr. J. S. Mill, defining the terms of the new science, adopted Comte's law of the universal evolution of humanity, but without even stating the central problems of sacred history and prophecy. The late Mr. Buckle introduced his history of civilization with a discussion of the dogmas of free-will and predestination, or supernatural interference, as having been,

hitherto, the chief impediments to the formation of a historical science. Dr. Draper has claimed that his laws of development are compatible with individual free-will, and occasionally recognizes the fact of a Supreme Being, though without discussing the corresponding question of His relation to such laws in history. But Mr. Spencer, as unable to conceive of a Providence as of a Creation, lays it down as a preliminary principle, that for those who entertain that conception, there can be no such thing as sociology, properly so called.

On the revealed side of the same science, however, may be traced corresponding degrees of divergence from the rational theory of society. In the first stage occurred the great religious revolt from a false theocracy, the vicious predominance of the court of Rome. It was the reforming period, when the Church was everywhere returning to its normal position and relations as a spiritual body, independent of the State, and its new founders were striving to reorganize it on more Scriptural and rational principles. Savonarola, Wickliff and Huss had led the way as martyrs to ecclesiastical liberty. Chancellor Gerson of Paris, styled the most Christian Doctor, in the great council of Constance, took the first bold stand against that papal autocracy, before which subsequent councils and churches only quailed in submission, until Luther burnt the pope's bull at Wittemberg. Thomas Cartwright, whose Directory of Church Government cost him his chair at Cambridge, led the first English Presbytery against that alleged divine right of bishops, which distracted the British kingdoms with sectarian warfare until the separate establishment of the churches of England and Scotland. Godwin and Nye were at the same time assailing the divine right of presbytery. Jeremy Taylor, when a schoolmaster in Wales (through what he termed the gentleness and mercy of a noble enemy), wrought out those principles of religious toleration in his Liberty of Prophesying, which, though soon repudiated by the Act of Uniformity, were yet to be vindicated in the American churches. George Whitefield, the apostle to the new world, whose common-place sermons kindled the young colonies as with a tongue of flame, breathed that spirit of evangelical alliance which still glows in both hemispheres. John Wesley

meanwhile was founding a new eclectic polity, destined to rival the oldest historical churches. At length Thomas Chalmers, the greatest reformer since Knox, sundering life-long ties to a state-religion which he had eloquently defended in his Christian Polity, led forth the Free Church of Scotland as pioneer in a process of disestablishment, already spreading throughout Great Britain, and indeed throughout Christendom. And in connection with various practical movements towards unity of faith and worship among the Greek and Anglican, the Episcopal and Presbyterian communions, large-hearted Christian scholars, of every name, are proceeding, with fresh historical research, to define anew the Scriptural doctrine of one Catholic and Apostolic Church as the mystical body of Christ and temple of the Holy Ghost.

But meanwhile, in the next stage of indifference, as if wholly unconscious of the new science of society which has been emerging, have appeared various ecclesiastical schools still adhering to traditional dogmas concerning the nature, the history, and the triumph of the Church. As to the nature of the Church, opinions diverged at the Reformation. Roman Catholics, such as Bellarmin, defined the Church a visible society, or polity, as visible as the Kingdom of France or the Republic of Venice, composed of men united in the profession of the Christian faith and the communion of the sacraments, under the government of lawful pastors, and chiefly of the Roman Pontiff who, as the successor of St. Peter and vicar of Christ, is invested with supreme dominion, both temporal and spiritual. Anglicans, such as Palmer, have substantially adopted the same definition, rejecting only the primacy or supremacy of the Bishop of Rome. Some Presbyterians have been inclined to a similar view, restricting the apostolic succession to presbyters as on a par with bishops or prelates. But the great mass of Protestant and Reformed divines, such as Luther, Calvin and Zwingle, defined the Church an invisible society, or communion of saints, of which Christ is the only spiritual head, and all true believers the members, wheresoever they may be found, and howsoever they may be organized, whether with a polity derived historically from the Church of the Apostles, as by the Episcopalians, or simply

copied after the model of that Church as by the Presbyterians, Methodists and Lutherans, or substantially framed upon the same ecclesiastical principles, as by the Baptists, Congregationalists and Unitarians. And while all have agreed in rejecting the Roman dogma of the supremacy of the Church over the State, they have differed endlessly, in theory and practice, as to the extent to which the Church should be independent of the State, or may be susceptible of union and combination with it.

As to the history of the Church, the great body of ecclesiastical historians has shown a like diversity of views, with the same apparent disregard of the accompanying secular development. First came the Protestant schools, constructing history, polemically, against Roman Catholicism. Mathias Flacius of Illyricum, organizing German learning at Magdeburg in a collection of topical histories termed the "Magdeburg Centuries," ignored all European civilization but the primitive and reformed Churches, as connected by a few antipapal witnesses of the truth in the middle ages. Then followed the Roman Catholic school constructing history, polemically, against Protestantism. Cardinal Cæsar Baronius, stigmatizing the folios of Flacius as mere centuries of Satan, and substituting for them his own "Ecclesiastical Annals," packed from the Vatican library, admitted nothing into European civilization but the mediæval papacy, classing the Reformation itself with Arianism, as a mere incidental heresy. And to this school belonged the still more polemical histories of the Gallican prelates, Fleury and Bossuet. Afterwards appeared the various sectarian schools, constructing history exclusively in the interest of some particular church or denomination. David Calderwood, deprived of office for his opposition to prelacy, wrote his standard "History of the Church of Scotland" against the Episcopalians; Peter Heylin, reinstated by the Restoration, composed his retaliatory "History of the Presbyterians;" Daniel Neal, in his well-known history, defended the Puritans against both Presbyterians and Episcopalians; and a host of other ecclesiastical partizans converted English history into a battle-ground, where primitive apostles, elders and synagogues were made

to reappear and masquerade as modern bishops, presbyters and congregations, in defiance of all surrounding civilization. At length came the pietistic schools, constructing history exclusively in the interest of mere personal religion. Joseph Milner, an English clergyman of the evangelical type, composed his Church History avowedly on a new plan, for the celebration of genuine piety alone, deliberately excluding all other elements of Christian culture as unedifying. And other writers of the same school, such as Arnold, in his Impartial History of the Church and of Heretics, have carried this unscientific method to the extreme of glorifying mere schismatics as the heroes of Christianity, and making all contemporaneous history, with all great secular interests, revolve around a party or a sect.

As to the triumph of the Church, or Church of the future, opinions were also divided. Roman Catholics drew the distinction between the Church militant and the Church triumphant, including in the former the earthly hierarchy of clerical orders, headed by the Pope, and in the latter the heavenly hierarchy of saints and angels, crowned with the Virgin Mary. Protestants generally restricted their distinction between the invisible and visible Church to this world alone, and looked for the coincidence of the two, in a perfected Christian polity, at the end of the present dispensation; some anticipating this Church of the future in the ordinary course of history and Providence; but the great mass, especially the Millennarians, predicting it as a new miraculous economy, to be introduced by the visible return and reign of Christ at Jerusalem.

In the third and last stage of indifference, social science and civil history have been virtually repudiated as unchurchly and unchristian, and attempts made to construct an exclusively biblical doctrine of society. While some large-hearted and far-seeing divines, such as Neander and Milman, have perceived the vital connection of civilization with Christianity in history, and others, such as Arnold and Rothe, have looked forward to their consummate union in an ideal Christian state, yet these have been too exceptional to form a great guiding class, and as yet could do little more than admit and lament

the narrow unhistorical spirit which characterizes the body of modern ecclesiastical learning. Dr. John Henry Newman, before he had the zeal of a convert to Catholicism, declared, in his Essay on the Development of Christian Doctrine, that the only English writer, who had any claims to be considered an ecclesiastical historian, was the infidel Gibbon, and that the popular religion seems scarcely to recognize the twelve ages between the Councils of Nicæa and Trent, except as illustrating Protestant interpretations of certain prophecies of St. Peter and St. Paul. Dr. J. Addison Alexander, in an article on the History of Doctrines, dwells upon an unhistorical peculiarity of the American mind, which leads it to the perpetual resuscitation of exploded absurdities and renewal of attempts long since proved abortive, and has forced religion into a false position in reference to the important interests of science, art and civil government. The late Stephen Colwell was so convinced of this divorce of the Church from all modern social science, that he published a work entitled "New Themes for the Protestant Clergy: Creeds without Charity, Theology without Humanity, and Protestantism without Christianity." And the same spirit lingers even in the older, more historical nations. The reactionary Catholic school in France simply repudiates the abounding socialistic speculations of the age as the mere froth of the Revolution on the last wave of Protestantism. And even German orthodoxy, forced into a purely apologetic position by the extraordinary growth of historical study and infidel criticism, has seemed to be making a breach rather than an alliance between Christianity and civilization. At a time when the social and political sciences, in all countries, are pursued with unprecedented vigor and success, and when, too, reformers and philanthropists are borrowing the Scripture ideas of liberty, fraternity and charity, and caricaturing before our eyes the Christian community of goods, the leading ecclesiastics of the day continue to represent Providence as a systematic judgment throughout history, civilization as an abortive growth of sin, the Church as a mere training school for heaven, and the millennium as an impending social catastrophe.

And thus sociology, the science of organized humanity, if

it is to be disorganized by the indifferent spirit, instead of realizing the true ideal of prophecy and philanthropy, would only revive the dreams of mediæval monks and fanatics, or amuse us with visionary utopias and reforms.

The Schism in Theology.

In theology, at length, the two antagonists will be found parted from each other as by an impassable gulf.

On the rational side may be traced a gradual divergence from the whole revealed doctrine of religion. In the first of the three stages of departure came the glad escape from a false biblical theology, from the dry, systematic divinity of the schools. It was the time when the works of God began to be studied together with His word, and brave spirits and free-thinkers, as well as intelligent believers, were asserting the rights of reason against mere authority in religion. Raimond of Sebonde, a professor of medicine and a loyal disciple both of Aquinas and Albertus, early in the fifteenth century had written a treatise on the Book of Creation, in which nature and revelation were described as two volumes, interpreting each other, whilst the doctrine of divine rewards and punishments was deduced from the moral constitution of man as well as the law of God. Montaigne, having translated the work of Raimond under the new title of Natural Theology, had proclaimed in France that right of free examination into religion, which was afterwards to be more distinctly enunciated by Collins in England and Reimarus in Germany. Herbert of Cherbury, the father of modern deism, in his treatise on Truth as distinguished from Revelation, then for the first time advocated mere natural religion as alone sufficient and absolute, while in his Religion of the Gentiles he even anticipated the problems of the latest comparative theology, by attempting to separate the essential truths common to Heathenism and Christianity. Spinoza, the father of modern pantheism, probed that metaphysical question of the immanence of God in the world, which the profoundest thought since then has been pursuing. Descartes, renewing the ontological theism of Augustine and Anselm, with his terse

formula "I think God, therefore God is," reasoned from the conception to the existence of a perfect being, the very idea of whom, like that of a triangle, must involve the reality; and thus opened the path pursued by Samuel Clark, Mendelssohn and Cousin. Christian Wolf, renewing the cosmological theism of Diodorus and Hugh St. Victor, in his Rational Theology, argued from the dependence of the world as a contingent effect to the necessity of a God as its only sufficient reason and cause; and thus prepared the way for Bilfinger, Baumgarten and Meier. Derham, renewing the teleological theism of Athanasias and Aquinas, in his Physico-theology, collected from the existing natural sciences those evidences of design in nature, of the Power, Wisdom and Goodness of the Creator, which were to be more fully unfolded by the Boyle lecturers and the Bridgewater essayists. Crusius, renewing the moral theism of Tertullian and Raimond, in his Guide to a Reasonable Life, deduced from the natural conscience those proofs of a spiritual Lawgiver and Judge, which have since been elaborated by Kant, Fichte and Hamilton. At length Bishop Butler, assuming a demonstrated theism from these combined arguments, proceeded in his Analogy, by a course of inductive logic, to lay a foundation in the mental and moral sciences for those remaining articles of essential religion, the Divine Government, natural and moral, the Future State of Rewards and Punishments, and the Present State of Probation and Discipline, which had been systematized by Toland, Morgan and Tindall. Since then, too, that Catholic deism of Justin Martyr and Savonarola, which was to be derived from the consent of nations, from the internal coalescence of religions, has begun to find more or less avowed promoters in the travellers, missionaries, antiquarians, mythologists, philologists and historians, who have been bringing Christianity into connection with the Judaism, Hellenism and Mohamedanism of the ancient world, as well as the Brahminism, Budhism and Polytheism of the present day. And thus the materials have been collected for a new science of religion, treated as a universal human phenomenon, regulated by psychical and social laws.

Connected with these investigations, however, there also

appeared in the second divergent stage numerous hypotheses, scarcely scientific as yet, concerning the origin, the development and the destiny of religion, of natural or essential religion, as manifested in the individual and in society. As to the first of these problems, the origin of religion, there were the two opposite schools of naturalism and supernaturalism, of rationalism and scripturalism. According to the latter, all real religion is supernatural and revealed. And it had been so held from the beginning. The Greek apologists, Justin Martyr and Clement, had described any kindred truths of heathenism as but the germs of the Christian Logos, and styled Plato himself a mere Hebrew philosopher, who had borrowed his teachings from the Old Testament. The Latin apologists, Tertullian and Minucius Felix, had denounced the myths and oracles of paganism as Satanic mimicries, and claimed that its counterfeit doctrines could only suggest either that the Christians were philosophers or that the philosophers had been Christians. In the middle ages, also, the Mohammedan and Scandinavian religions had been treated as mere diabolic or human inventions, to be destroyed rather than converted. And though scholastic doctors, such as Anselm and Aquinas, had begun to frame the great theistic argument, since so famous, yet it was only as corroborative of a revealed divinity, which was held to be beyond the reach of unaided reason. But since the Reformation the rise of deism, as an independent religion of nature, has provoked anew at the centre of Christendom the battles which the early Church once waged on the confines of heathendom, and various attempts have been made to reclaim and explain the religious tenets which had been captured, as it were, from Christianity.

As a first class of proofs, it was urged that a spiritual revelation of religion is necessary and important. Dr. Halyburton of St. Andrew's, in an elaborate work entitled Natural Religion Insufficient and Revealed Necessary, argued against Herbert that the light of nature is wholly defective as to the being of a God, a rule of duty and a future state, and that the five articles of the supposed absolute and universal religion do not, as a matter of fact, obtain beyond the pale of the Chris-

tian revelation among heathen nations. Bishop Conybeare, in a similar Defence of Revealed Religion against Tindall, maintained that the true religion of nature is not derivable from reason alone, even by the wisest men; that if perfected, it could not solve the most essential questions of all religion, such as the pardon of sin, the means of reformation and the awards of futurity; that what little truth it contains needs to be confirmed and completed by a supernatural revelation; and that the known miraculous and prophetical proofs of such a revelation are more obvious to common minds than the most elaborate reasonings of deists and philosophers. Chapman, in a treatise styled Eusebius, replied to Morgan, that the peculiar truths of a revealed religion cannot be tested by our mere rational and moral faculties; that miracles and prophecies are the proper proofs of such a religion; that the Jewish and Christian Scriptures have come down to us amply sustained by such kind of evidence; and that the attempt to extract from them a Christian deism conformable to reason and the fitness of things, by sacrificing the Old Testament and modifying the New, is simply subversive of all religion, both natural and revealed. Dr. Leland of Dublin, besides his special replies to Tindall and Morgan and his View of Deistical Writers and their opponents, completed his labors with a learned treatise on the Advantage and Necessity of the Christian Revelation, as evinced by the state of the ancient heathen world. At length Bishop Butler, in the second part of his Analogy, condensed and arranged all the arguments of his predecessors in one compact course of reasoning, repelling every conceivable objection to revealed religion, and establishing it in harmony with the general scheme of nature and Providence. And since that time little of value in the same vein has been added by any English or German writer, unless it be the argument of Chalmers, that Natural Theology, as its last word, still calls for a revelation.

As another class of proofs, corroborative of the former class, it has been urged that all natural religions are themselves traceable to the Jewish and Christian revelation. The learned Theophilus Gale, in his work, The Court of the Gentiles, thus essayed, by ingenious historical and philological

parallelisms, to refer the whole Grecian and Roman religion and philosophy to the Word of God, as mere borrowed light from that sacred fire. Cudworth even sought for traces of the Trinity in Platonism. Against the early deists, also, it was held that their so-called natural religion had been unconsciously derived by them from the Christian Scriptures, since it could not be found either in ancient or modern heathenism, being somewhat like the fiction of the social contract which can be traced in no existing government. And more recently, with our growing knowledge of the other extant religions of the world, eager apologists have been striving to explain them, as mere counterfeits or corruptions of Judaism and Christianity. The school of Tertullian has been revived by writers, such as Morris and Holsam, who would maintain, against learned and philosophical Hindoos, that the monstrous triads, avatars and human sacrifices of Brahminism are but infernal parodies of the trinity, the incarnation, and the atonement, or distorted fragments of primeval prophecies, and that the grosser rites of polytheism are, as they claim to be, mere devil-worship and sorcery. In distinction from such views, however, the late Archdeacon Hardwicke, Christian Advocate in the University of Cambridge, in his thoughtful treatise, Christ and other Masters, after proving the unity of the human race and the prophetical character of Hebraism, as contrasted with Brahminism, Budhism and Polytheism, has endeavored to show that any real correspondences between Christianity and those religions, such as the facts of the fall, the deluge, the rite of sacrifice, may be referred to floating traditions, borne away in the great primeval migrations to Asia, America and Africa, whilst the apparent doctrinal correspondences above mentioned are due to international intercourse at later periods. The distinguished orientalist, Abel-Rémusat, maintained that Budhism in Thibet had been so modified by the Nestorian missionaries and early European travelers, that it might almost be termed the Christianity of the East. The Abbé Huc and Rev. Samuel Beale have explained the same coincidences in like manner. Other writers, with Frederick Schlegel, have sought traces of a much earlier and more general connection. Henry Lücken, Roman Catho-

lic Professor at Münster, in an elaborate work on the Traditions of the Human Race, has gathered evidences of a primeval revelation, from all ancient and modern nations and tribes, as afforded in their legends of the fall and the deluge, and in Messianic presages of the coming of Christ and the end of the world. Ernest Von Bunsen, in his Unity of Religions, described it as a secret tradition, preserved by all peoples in their migrations. Professor Moffat, in his Comparative History of Religions, has also proposed to connect the great systems of India, China and Persia with an aboriginal revelation, the patriarchal monotheism of Noah, from which they have been departing through various revolutions, whilst Judaism and Christianity have retained and completed it. The Jesuits thus sought to trace the ancient wisdom of the Chinese to the patriarchs of Scripture. Living Protestant missionaries in different fields are also seeking for such traditions as part of their aggressive work against heathenism. And a similar apologetic has been attempted by the late Bishop Meade of Virginia, in a popular volume entitled The Bible and the Classics, with the view of counteracting the pagan tendencies of Greek and Latin literature in schools and colleges.

But as a conclusive class of proofs, including yet transcending the other two classes, it is now urged that all religions spring from a universal revelation which, in Christianity alone, is matured and completed. That Judaism was thus resumed in Christianity has always been the orthodox belief; that natural religion is but an essential part of revealed, was the standing reply to the English deists; and the school of Justin Martyr seems to be re-appearing, with reference to a similar divine origin of ancient and modern heathenism. The first step may have been unconsciously taken by classical scholars, such as Nägelsbach, Lübker and Tyler, who have developed the theology of Homer, Euripides and Sophocles, or such as Ackerman, Baur and Tayler Lewis, who have discriminated the Christian elements in Socrates, Plato and Tacitus. And with the growth of a more philanthropic spirit or a pantheistic conception of humanity, it has not been strange that such fragmentary truths, in the purer pagan literature, should have been hailed as refracted rays or scintillations of that Divine

Word, which shines fully in Christ alone, yet lighteth every man that cometh into the world. Upon some such general principle Schneider, in his Christian Chimes from the Grecian and Roman Classics, after citing the apostles, fathers and reformers to prove his position, has compiled and arranged an immense variety of heathen maxims and Scripture texts, as in a sort of concordant catechism, including every article of faith. Mr. Gladstone, also, in his scholarly treatise on Homer and the Homeric Age, argues that Greek mythology is not so much a deification of the powers of nature, as a corruption of old theistic and Messianic traditions. The late Bishop Trench, in his Hulsean lectures, entitled Christ the Desire of all Nations, has depicted, in a striking light, the unconscious prophecies or instinctive yearnings of the whole heathen world toward some Great Deliverer from sin, Vanquisher of death, Prophet, Sacrifice and Founder of a new spiritual kingdom. Dr. Dorner, in his profound and erudite History of the Person of Christ, has shown that the universal idea of a God-man, that pervades all religions, could not be realized in Budhism, which humanized God, nor in Hellenism, which deified man, nor in Judaism, which sought a political Messiah, nor in Alexandrian Platonism, which dreamed of an impersonal Logos, but only in Christ, the Incarnate Word, as defined in the Gospels and subsequently unfolded through the stages of dogmatic history. And Professor Edmund Spiess of Jena, whose Logos Spermaticos is a learned collation of parallel passages from the Grecian and New Testament writings, has maintained, in a suggestive memoir before the Evangelical Alliance, that the consensus of Christianity with other religions includes, as germs of the divine word, certain essential truths common to them all, such as the fall of man and future awards, while its dissensus from them reserves the great doctrine of the atonement as the proper theme of its own special revelation. It thus appears that, by orthodox writers, all religion is supposed, in some form or degree, to be revealed.

According to the rationalists, however, all religion is purely natural and rational in its origin. And this opinion was also of ancient growth. The early infidels, Celsus and Porphyry,

had been fain to reclaim Christian doctrine as but the true Logos of Plato, and supersede the Hebrew prophecies with heathen oracles. The later infidels, Hierocles and Julian, had even matched the miracles of Jesus of Nazareth with the feats of Apollonius of Tyanna, and striven to supplant the severe graces of the new religion with the romantic charms of the old mythology. And though all feeling for any form of heathenism disappeared during the mediæval conflicts with the Goth and the Saracen, yet, on the decline of the Crusades and with the classical revival, came the schools of Boccacio and Erasmus, identifying heathen gods and goddesses with the Trinity, the Virgin and the angels, and praising Grecian poets and philosophers at the expense of Christian doctors and saints. The former likened the three great religions, Judaism, Christianity and Mahometanism, to three rings, so much alike that the genuine could not be distinguished from the copies. And even among the reformers, Luther expressed pious hopes for the salvation of Cicero, and Zwingle incurred censure for his unguarded praise of heathen moralists and sages. Early in the seventeenth century, Tobias Pfannerus wrote a learned treatise on The Purer Gentile Theology, in which he labored to show how nearly ancient pagans, by the light of reason and tradition, had approached the true religion in each of its most peculiar dogmas, and concluded with an essay on the salvability of the heathen. But it was not until Protestantism had been perverted into free-thinking, that such comparisons were undertaken in an unchristian spirit, and open efforts were made to recover the lost battles of the early pagan scepticism with the Christian faith.

At the outset of this great re-action, it was simply attempted to reduce Christianity to mere natural religion. Lord Herbert began the movement by compiling a Religion of the Laity and of the Nations, which would exclude every distinctive Christian tenet, but the existence of a God, the duty of worship, the claims of virtue, the efficacy of repentance, and the motive of rewards and punishments. John Toland of Ulster, a Catholic, a Protestant, a Dissenter, at length a Pantheist, in his Christianity not Mysterious, provoked more than fifty replies, by maintaining that revealed truths are

neither contrary to reason, nor above it, but, when once made known, as intelligible and plain as any other truths naturally within the reach of our faculties. Dr. Mathew Tindall, Lawfellow at Oxford and Judge-ecclesiastical in London, near the close of his life published his "Christianity as old as the Creation," in which he argued that natural religion, or the law of nature, is absolutely perfect and obvious to the conscience of all men, that it neither requires nor admits of an external revelation to explain and enforce it, and that the pretended Jewish and Christian revelations are defective in their evidences, obscure in their statements, immoral in their teachings, and without the universality and force which belong to the religion of nature. At length Morgan completed the attack of Tindall upon the internal distinctive truths of Christianity, as Collins and Woolston had already assailed its external prophetical and miraculous evidences. And the system thus elaborated was only reproduced, more or less fully, with French wit by Voltaire and Rousseau, in the Encyclopædia; with German culture by Reimarus and Lessing, in the Wolfenbüttel fragments; and with New England seriousness, by Channing and Dewey, in the form of Unitarianism.

It was next attempted to merge Christianity among the other religions of the heathen world. Sir Charles Blount, a disciple of Hierocles and of Herbert, at the close of the seventeenth century, republished the Life of Apollonius, the fabulous miracle-worker of Tyanna, with the view of involving Christianity in the dark suspicions which rested upon ancient paganism. In the same spirit, Dupuis and Volney, at the close of the last century, in their work upon the origin of cults and the revolutions of empires, dared to rank Christ with Hercules and Adonis, and to class Judaism and Christianity, with other ancient religions, as mere inventions of priestcraft, or varieties of the universal worship of nature. Since Voltaire sneered at the supposed resemblance between the Hindoo triad and the Christian trinity, sceptical travelers, antiquarians and linguists, such as Holwel, Lubbock and Burnouf, have insinuated that the Hebrew monotheism, ritual and angelology were largely borrowed from the neighboring systems of India, Egypt and Persia, as by a like international

commerce of religions mediæval Christianity now appears in the Lamaism of Thibet, even to the use of the cross, rosary, holy water, vestments, litanies and processions. And while non-Christian writers have thus been aiming to make revealed religion equally false with all natural religions, as being alike with them a mere relic of primeval barbaric superstition, some unwary apologists and comparative theologians, of the liberal school, have been representing it as only equally true, or at least magnifying its consent with them, rather than its dissent from them. Wolf and Priestly thus suffered a double misconception for having too favorably compared Confucius and Socrates with Christ. Creuzer, in his great classical work on the mythology of all nations, whilst admitting that among known religions the Christian is best adapted to the moral nature of man, yet maintained that it owes its superiority, in doctrine and worship, to their preparatory ministry. The late Professor F. D. Maurice, in his Boyle Lectures on the Religions of the World, after distinguishing their characteristic doctrines, dwells upon the Mohamedan, Brahminical and Buddhist sides of Christianity as being fraught with danger or benefit, according as they are repressed and exaggerated, or kept in their due proportions and relations. Dr. James Freeman Clarke, in his examination of the Ten Great Religions, whilst assigning to each of them some vital truth and Providential warrant, such as spirituality to Brahmanism, morality to Confucianism, penitence to Boodhism, simply maintains that, since they are ethnic, partial and arrested growths, Christianity alone is catholic, complete and progressive, fitted to supersede them as the religion of the whole human race. The late Theodore Parker, advancing more boldly, in his Discourses on Religion, classed Christianity with the different forms of Fetichism, Polytheism and Monotheism, as only the highest extant phase of an absolute religion, pervading all ages and countries, and embracing a paradise into which the swarthy Indian, the grim-faced Calmuck, the Grecian peasant, shall come from the East and West, to sit down with Moses and Zoroaster, with Socrates and Christ.

But the final effort has been to derive all religion, including Christianity, from the mere reason of man. That ancient

and modern heathenism thus originated had long been the general belief; that natural or essential religion is discoverable by mere reason, without the aid of a revelation, was but the peculiar boast of the English deists; and the school of Celsus and Porphyry would seem to have returned, as respects a like human origin of Judaism and Christianity. The way was incautiously opened by such devout philosophers as Wolf, Locke and Kant, striving to demonstrate the dogmas of revealed theology, to prove the reasonableness of Christianity, and to confine religion as mere morality, within the bounds of pure reason; by such philosophic divines as Schleiermacher, Wegscheider and De Wette; and still further, by such daring thinkers as Hegel, Schelling and Fichte, in their philosophies of religion, of revelation and of mythology. And it only remained, by combining the speculative spirit with critical research, to separate the mythical from the historical element in sacred as well as classical antiquity, and exhibit Jehovah as but an Israelitish Jupiter, Samson as but a Hebrew Hercules, Jesus as only a Jewish Socrates, and Christianity itself as mere mythology. David Frederick Strauss, in his celebrated Life of Christ, after maintaining the possibility of myths in the New Testament, discriminating between their philosophical and historical marks, and giving rules for detecting them, proceeded to rally all previous English, French and German skepticism against the literal truth of the gospel histories, with the view of resolving them into pious creations of the evangelists, which they had artlessly woven out of a few extraordinary facts, combined with Messianic traditions. Bruno Bauer, rebounding from the orthodox to the infidel side of Hegelianism, then completed the destructive criticism of Strauss, in the Synoptical Gospels, by assailing them as conscious inventions of their authors, mere dogmatic afterthoughts, which they had engrafted upon the original narrative of St. Mark. Meanwhile, Ferdinand Christian Baur, leader of the Tübingen school, by a more subtle dissection of the Acts and Epistles of the Apostles, essayed to trace the Christianity of the First Three Centuries, from its early Jewish and Gentile phases in the rival schools of Peter and Paul, to their coalescence in the Council of Nice, together with the

subsequent development of the Trinity, the Incarnation and the Atonement, through successive stages of dogmatic history, into the forms of the Hegelian dialectic. At length Ludwig Feuerbach, assailing the dogmatic as well as historic faith, retained in his "Essence of Christianity" nothing but the idea of God as a mere abstraction of the understanding or personification of humanity, evaporated theology into anthropology, and reduced piety itself to mere hallucination. And thus, by the extreme rationalists, all religion would be rendered purely mythical and illusive.

As to the second problem, the history or development of religion, there were also two rival schools, the one referring it to Providential dispensations and interpositions, the other to mere mental and social laws. According to the former, religion advances in history by a series of miraculous economies, messengers, incarnations, revelations. Many of the early Christians, especially the Montanist fathers, Ignatius and Tertullian, and also Lactantius, held that as Heathenism and Judaism had been superseded by Christianity, so Christianity itself was about to be superseded by a more complete apocalypse with a Second Advent of Christ, General Resurrection and Judgment of the world, and reign of the risen saints upon earth for a thousand years. The same Millenarian view was revived in the thirteenth century by the Fratricelli, or advocates of the so-called "Eternal Gospel," such as Joachim. Amaury and John of Parma, who contended that Judaism was the dispensation of the Father, Christianity that of the Son, and a new approaching dynasty that of the Holy Spirit; the first heralded by the twelve sons of Jacob, the second by the twelve apostles of Christ, and the third by the twelve angels of the heavenly city. According to Postel, such successive economies are connected with four distinct incarnations or births of Christ, first in the divine nature as the Son of God, then in Adam as the head of the human race, at length in the Virgin Mary as the founder of a new spiritual kingdom, and at last in the resurrection as the Redeemer of both man and nature. At a later period similar views, but in a more chimerical form, were associated with the occult sciences by the Rosicrucians, Paracelsus, Bœhme and Fludd, who represented

Christianity and Mahometanism as destined soon to give place to a new religion, whose followers would enjoy perpetual youth, immortality and magical, physical powers. After the reformation, in connection with the political ferments of the time, the same opinions were advocated, in a still more practical manner, by the Anabaptists in Germany, and conspicuously by the Fifth Monarchists of the English Revolution, who believed that the four great antichristian monarchies projected by Daniel in history, the Babylonian, Persian, Grecian and Roman, were about to be succeeded by the return of Christ and reign of the saints in a theocracy forcibly established upon the ruins of all earthly kingdoms. And at length, in recent times, such speculations have been recast, with more or less scientific pretension, as a theory of universal religion.

In this way are explained the relations of Christianity to ancient and modern Heathenism. The early ecclesiastic historians, such as Bossuet, Prideaux and Schuckford, as we have seen, endeavored to connect all sacred and profane history together in one world-wide scheme of divine dispensations for the destruction of the false religions of the heathen world, and the vindication of the one true religion revealed in the Jewish and Christian Church. Jonathan Edwards, in the same spirit, but with more dogmatic precision, sketched a History of the Work of Redemption as devised among the sacred persons of the Trinity and executed in human history by vast providential economies, extending from the fall of man to the incarnation of Christ and the end of the world, and involving the overthrow of heathenism, in its modern as well as ancient forms, by means of special interpositions and supernatural judgments. Learned interpreters of prophecy, such as Mede, Lowth and Keith, have regarded the four beasts in the book of Daniel as denoting the great pagan powers of Assyria, Persia, Greece and Rome, which have been successively subverted by Divine Providence in order to make way for the universal monarchy of Messiah at the end of the present dispensation. Consistently with such views the great enterprise of foreign missions has been organized as a moral crusade against the modern anti-Christian systems of Brahminism, Budhism and Polytheism; while the whole Millennarian school

of our day attach no higher importance to the work than as a vindicatory proclamation of the gospel against surviving Gentile religions which are so utterly false that they can neither be reformed nor converted, but must be simply destroyed at the ever-imminent coming of Christ in judgment.

In the same manner have been explained the relations of Christianity to ancient and modern Judaism. While it has ever been the orthodox belief that the Old Testament has been fulfilled in the New, yet as to the mode and extent of that fulfillment there have been different schools of interpretation. The earlier school of Glass, Cocceius and Witsius, though disclaiming the allegories of the fathers, almost equalled them by maintaining that everything in Judaism was typical of something in Christianity, not merely the few antitypes mentioned by the apostles, but the entire Jewish ritual and history, the most trivial ceremonies and incidents. The more sober school of Macknight, Marsh and Moses Stuart admitted an evangelical import into the Old Testament Scriptures only so far as it has been actually discriminated and explained by the New Testament writers, in the instances which they have cited from the ritual and prophetical books. The German school of Hengstenberg and Olshausen, together with the Scottish school of Fairbairn and Bonar, reconstructing the whole Christology and Typology of Scripture, have looked for the Gospel in the Pentateuch, Christ in the Psalms, and the Church in the Prophets. And the Millennarian, literalistic school of Bickersteth, McNeile and Judge Joel Jones anticipate a still further and more miraculous fulfillment of the Old Testament in modern as well as ancient Judaism, by the restoration of the Jews to the Holy Land, the Second Advent of Christ as their political Messiah and their predominance with Him in a theocracy, to be established at Mt. Zion.

Finally, this supernaturalistic view has extended to the relations of ancient and modern Christianity. Nearly all existing Churches strive to connect themselves with the primitive Church of the apostles, but in different kinds and degrees of relationship. The Greek Church, claiming to be alone apostolic and catholic, treats both Romanism and Protestantism as heresies, while Mohamedanism is to be anathematized as

the bastard Christianity predicted under the name of the false prophet, the man of sin, the anti-Christ. The Roman Church, professing to have completed the Apostolic doctrine with the miracles and dogmas of her saints and fathers, denounces paganism as the anti-Christ, or mystical Babylon of the Apocalypse, and Protestantism as an incidental apostacy, like Arianism. The different Protestant Churches, maintaining the Reformation to have been a revival of primitive Christianity, have usually stigmatized Catholicism as the anti-Christ, and classed Mohamedanism with Paganism. It has, indeed, been a cherished opinion of some large-minded scholars, such as Neander, Ullman and Schaff, that Catholicism and Protestantism are to be reunited in an ideal future Church, which will complete a series of divine dispensations, foreshadowed in the apostolic age, by the respective characters of Peter, Paul and John. But the more literalistic sects of Swedenborg, Irving and Cumming, regarding all existing forms of Christianity as corrupt or imperfect, are looking for the speedy establishment of the New Jerusalem of the Apocalypse, with apostolic gifts and powers, the miraculous conversion of Judaism, the violent destruction of Mohamedanism and Paganism, and the universal reign of Messiah and the saints on the scene of a renovated earth. And thus it has become, in one form or another, a prevailing conviction, that the history of Christianity is a supernatural career of triumph over all other religions.

According to the other hypothesis, however, the historical development of religion is a purely natural process, regulated by invariable laws. And it has always found some advocates, especially in times of decaying faith. The Egyptians, and after them the Greeks and Latins, were accustomed to associate epochs of innocence and depravity with great astronomical periods, marked by terrestrial catastrophes, such as universal deluges and conflagrations, which had been used by the gods as the means of punishing and renewing the human race. Amid the declining mythologies of the ancient world, it was the infidel policy of Celsus and Porphyry to confound the Christian with the Platonic Logos as a purely rational conception, and to class the miracles and prophecies with heathen oracles and feats of magic as mere natural manifes-

tations of human credulity. Even in the middle ages of faith, bold thinkers such as Raymond Lully, Arnold of Villanova, and Roger Bacon had begun to anticipate the millennium as a gradual achievement of Providence through the progress of science. At the revival of learning Pomponace, Cardan and Vanini, renewing the classic myth of the golden and iron ages, endeavored to connect the rise and fall of religions with astrological periods or great sidereal conjunctions which were attended, as they maintained, with prodigies, prophecies and messiahs, producing universal consternation and faith only to be replaced by doubt and unbelief as the age of miracles passed away. And though the Reformation brought with it new supernaturalistic conceptions of Christianity, yet it was not long before these began to give place to more scientific speculations.

It was at first attempted to refer a supposed natural growth and decline of religion to laws of political development. Machiavelli had included epochs of religious credulity and infidelity in his vast social cycles of democracy and monarchy, simplicity and luxury, probity and corruption; maintaining that Roman Christianity itself was but a repetition of Roman Polytheism, and even an enfeebled repetition, because of its enjoined denial of those passions of honor, valor and ambition which had been the impulsive forces of the previous pagan civilization. Campanella, also associating an increase and decrease of faith with the rise and fall of empire, represented all religions as passing through grand astronomical cycles between the extremes of theocracy and democracy, papacy and atheism, now disorganized by heresies and schisms, then reorganized by new revelations and dogmas, as in the successive conflicts of Judaism, Christianity, and Mohammedanism, and in the alternate orthodoxies and heresies of paganism. Boullanger traced similar revolutions from a primitive theocracy toward an ultimate monarchy or sovereignty of reason. Vico, in a more inductive spirit, completed such speculations by collating religious similarities in the civil history of different nations, and exhibiting Christian as well as pagan civilizations careering through the same cycles of faith and doubt toward a final republic of piety and justice.

It was also attempted, in the same scientific spirit, to connect the history of religion with laws of intellectual development. Turgot, secularizing the universal history of Bossuet, had associated Christianity with the advancement of the human mind; and Condorcet had even sketched a career of science as gradually outgrowing religion. Hume, too, had traced the natural history of religion, from polytheism to monotheism, under the action of the imaginative and speculative faculties of mankind. St. Simon, completing such views, then connected the religious progress of the race with his great intellectual epochs of social synthesis and analysis, organization and disorganization, as seen at first in ancient polytheism and infidelity, and then in modern Catholicism and Protestantism, and about to appear again in a New Christianity of which he announced himself as the Messiah in a treatise dedicated to the Pope. Buchez, in his Science of History, endeavored to connect the social logic of St. Simon with the successive revelations to Adam, to Abraham, to Moses and to Christ as completed by the dogmas of the Gallican Church. Pierre Leroux, with more metaphysical subtlety, strove to resolve ancient Judaism and modern Christianity into St. Simonism as a sort of pantheistic religion of humanity, based upon social equality and involving the perpetual metempsychosis of the individual in the race. And Auguste Comte, as if combining the ideas of his predecessors from Campanella to St. Simon, represented theology as emerging from a primitive fetichism, through the classic polytheism, into the Catholic monotheism of the middle ages, only then to become decomposed by Protestantism, Deism, Atheism, and thus make way for the positivist or purely scientific religion of the future.

It has still further been attempted to subject Christianity itself to supposed laws of religious or Providential development. Bishop Butler, reasoning from the analogy of religion and nature, long ago with equal boldness and caution, had put forth the magnificent conjecture, that the whole Christian scheme from the beginning of the world, with all its miraculous phenomena, in the view of higher intelligences, may appear as much a natural process regulated by general

laws as the march of the seasons or the history of a flower. Lessing, too, had represented the successive revelations of Judaism and Christianity as only educating the human race by developing in history what existed potentially in the reason of mankind. And Kant, Fichte and Schelling had severally maintained that revealed religion is essentially identical with rational religion, that its contents may be rationally prejudged or criticised *a priori*, and that it is itself only a higher stage in the development of the mythologies or natural religions of the world. Carl Ludwig Nitzsch, on the basis of the Kantian rationalism, in a treatise upon the "Difference between an Authoritative and a Didactive Revelation," then argued that the only design of Christianity was to awaken and enlarge the latent truths of natural religions by means of its prophets and apostles. William Traugott Krug, also a disciple of Kant, and his successor at Königsberg, in some Letters on the Perfectibility of Revealed Religion, taking the ground that a perfect or absolute religion could not be revealed all at once to imperfect and finite minds, maintained that the object of Christ and His apostles was simply to premise the elements of such a religion and start the race upon a career towards it. Christoph Von Ammon, court preacher at Dresden, in his work on the "Development of Christianity towards a Universal Religion," held that as Christianity superseded Judaism by a more spiritual system, so each generation should expect to advance beyond the traditions of its predecessor into ever higher stages of religious knowledge and wisdom. Hegel also taught that the absolute religion contained in the Christian images and doctrines, having been dimly foreseen in the early Church, only reached its full apprehension through the dialectic process of his own philosophy. Zeller, in a "Critical and Historical Essay on the Perfectibility of Christianity," has pointed out the affinity of such views with those of the early and mediæval millennarians, who looked for new dispensations and revelations, as well as those of modern sociologists, who include Christianity with other interests under great laws of human development and perfectibility.

At length, by a new school of historical research, attempts

are made to construct a so-called comparative theology or inductive science of religions. Some Christian apologists, such as Trench, Maurice, J. Freeman Clarke, may have unknowingly taken a step in this direction by exhibiting ancient and modern heathenism as a brilliant though distorted and fragmentary reflection of the peculiar truths of that Judaism and Christianity with which they co-existed; by exalting the spiritual affinities as well as historical connections between pagan and revealed religions; and by representing them as conspiring and converging toward some absolute and universal religion of the future. Professor Moffat also, in his "Comparative History of Religions," though insisting upon the revealed origin of Judaism and its supernatural completion in Christianity, describes a natural progress of all religions by alternate revolutions and reformations, as from Noachism to Confucianism, from Brahminism to Budhism, from Catholicism to Protestantism. But the honor of proposing a distinct science of religions seems to belong to Professor Max Müller, who suggested that it should be constructed by a process like that of comparative philology, and should include Christianity among other religions as being indeed a standard toward which in various degrees they have approximated and yet itself also destined to decline and leave to philosophic religionists the task of reconstructing some more perfect successor. The Westminster Review, while agreeing with the Oxford Professor in the main, doubts if the new science is to be sought among the uncorrupted teachings of ancient religions at this mature age of the world. M. Emile Burnouf, in his treatise upon the subject, claims to have already founded such a science of religions upon the sciences of comparative ethnology, philology, and archæology, maintaining that the Aryan races were pantheistic, and the Semitic races monotheistic, that both elements have commingled in Judaism and Christianity, and that all religious creeds, with their issuing cults, succeed each other under fixed laws of differentiation, conflict and survival, by which great orthodoxies wax and wane as inevitably as a germ grows and dies or a wave rises and falls in the sea.

As to the third problem, the destiny of religion, two oppo-

site opinions are also emerging. According to one of them, all other religions are destined to be supplanted by Christianity as the one absolute religion of the future. The apostles themselves proclaimed it as a gospel for Jew and Gentile, for barbarian as well as Greek and Roman; and the Chiliast fathers looked for its immediate forcible triumph over the surrounding paganism by a second coming of Christ in judgment. The subsequent missionary labors of Augustine in England, Boniface in Germany and Siegfried in Sweden, proceeded more in the spirit of ecclesiastical propagandism. It seems to have been the policy of the imperial Church, under Charlemagne, to conquer as well as convert the Scandinavian religions with which it came in conflict, subduing them first by warlike prowess and then by spectacular worship. The great crusades of the mediæval theocracy were but the effort of Europe to supplant Mahomedanism by the sword. Roger Bacon even proposed to the Pope to burn the cities of the Mussulmans by the focal rays of incendiary mirrors. Raymond Lully would have overthrown them dialectically with his great art of logic. At a later period, Campanella revived the theocratic dream of Hildebrand in a treatise on universal papacy, styled the "Monarchy of Messiah," and endeavored to persuade the king of Spain to begin a series of wars for the extirpation of Protestantism throughout Europe, as well as the maintenance of Catholicism by the Spanish conquests in America, Asia and Africa. But the Jesuit Propaganda sought to repair the losses of the hierarchy in a more efficient manner, with its polyglot press and net-work of missions in all parts of the world. During the present century, the great Protestant Churches also have been engaging in organized efforts for the universal proclamation of the gospel in heathen lands. And at length such aims, with the growth of commerce, diplomacy and philanthropy, have begun to assume a color of scientific prevision as well as of practical success.

The triumph of Christianity over the different forms of modern heathenism is already thus anticipated as an event in the near future. It is argued that the Christian religion, as now maintained by the leading nations of Europe and America, is not only accompanied with a higher civilization, with

more political, intellectual and moral power than the semi-barbarous and savage religions of Asia and Africa, but contains within itself elements of truth, vitality and permanence before which they, in their weakness and decrepitude must, sooner or later, succumb and die out, as did the Grecian, Roman and Scandinavian mythologies, which it encountered in its earlier career. Confucianism, according to Neumann, McClatchie and other Chinese scholars, cited by Hardwicke, has long since degenerated from the pure monotheism of Noah into a system of mere atheistic state-craft and utilitarian ethics which, having been checked by Budhism, must inevitably wane before the advance of Christianity, as propagated by the missionaries and already espoused by the leaders of the great native rebellion. Brahminism, according to the learned William Jones, Wuttke and Wilson, has long since declined into mere dreamy pantheism among the priesthood, with the grossest polytheism among the populace, and though it has survived its conflicts with Budhism and Mahometanism, yet it is not so likely to withstand that Christian civilization with which it is fast becoming permeated. Budhism remains as the most formidable rival of Christianity, embracing, perhaps, as many millions of the human race in different countries, and yet, according to the testimony of Gutzlaff, Rémusat and Huc it was in its origin little more than a species of negative Protestantism against Brahminism, and has already waned into a hopeless nihilism, ready for a more positive Christian faith as its proper complement. As to the polytheism and fetichism of Africa, America and Oceanica, all travelers and missionaries agree in representing them as degraded forms of the grossest nature-worship and devil-worship which can offer no intellectual obstacle to a purer creed.

The triumph of Christianity over modern Judaism and Mohametanism is also predicted from similar data and reasonings. It is maintained that these systems are at best mere dead traditions and arrested growths, which were sloughed off and left to perish, like the defunct religions of ancient Egypt and Persia, that for a time accompanied the early progress of revelation. Judaism, having long since discharged its preparatory mission, is regarded by all Christian writers as

an anachronism in the modern world, a form of dormant legalism, which can only be quickened into evangelical life by the conversion of the Jews to Jesus as their only true Messiah, and possibly their return to the Holy Land at His Second Advent. Mohametanism, according to such authorities as Weil, Sprenger and Palgrave, can only be viewed as a great relapse from Christianity toward Judaism, a species of sensual fatalism fast becoming effete and corrupt through its own fiery passions. And Mormonism, that grotesque mixture of all three religions, is only cited as an anomalous blot upon our Christian civilization.

Finally, the triumph of Christianity over all antichristian heresy and infidelity is not less confidently expected as its last achievement. It is claimed by all Churches that the one true faith will yet come out victorious over error, as in former conflicts with schismatics and sceptics. Catholic writers regard Protestantism as a mere incidental heresy, of no greater significance in the onward march of the Church than the Arianism of the fourth century. Protestant writers look upon Catholicism as a vast apostasy of the dark ages, from which the whole Church is now recovering with primitive power and fervor. And both Catholics and Protestants unite in classing the infidel sciolists of the day with the Italian naturalists, the English deists, the French atheists and the German pantheists, as foes to be certainly vanquished. Thus it appears that, in one way or another, all Christians are looking forward to a time when Christianity shall have extirpated every other form of religion.

According to the rival hypothesis, however, Christianity is itself destined to be supplanted, together with other religions, by some new absolute religion of the future. From the first, its exclusive claims were resisted by Judaism with a bitterness that lingers to this hour. Its march through the Roman empire toward universality was disputed by the different forms of paganism, which sought to extinguish it with persecutions, and by the eclectic infidelity which would have merged both it and them in a new catholic creed of reason. The rude religions of the North, when converted by it, mingled fierce barbaric virtues with its gentle graces. Mohametanism, with a

resistless proselytism of the sword, seemed to have conquered its very shrine and wrested away half its empire. Its ever-asserted catholicity, repelled from Asia and Africa, and apparently rent in twain throughout Europe by means of the great schism between the Eastern and Western Churches, has since been repeatedly broken by intestine wars, and at length pulverized into the countless sects of Protestantism. And that infidelity which, meanwhile, has grown up through an abuse of its very light and freedom, after contending with it successively in Italy, England, France, Germany and America, seems now preparing to formulate the terms of its surrender and downfall.

It was at first claimed that the new absolute religion of the future will grow out of revealed religion, historically, as Christianity itself has grown out of Judaism. The early and mediæval millennarians having made the general idea of such a final religion familiar, it has only remained for modern sociologists to construct its creed, polity and worship out of the existing Christian civilization. The New Christianity of St. Simon is simply a proposed reorganization of the State upon the principles of the Church, such as charity, fraternity and equality, with the addition of scientific and economical provisions for the eradication of slavery, war, caste and poverty. Leroux, besides maintaining the historical connection of St. Simonism with Christianity, resolved revelation into reminiscence and presentiment, and identified the future life with the present state, the individual with the race, God with man, and heaven with earth; in a word, made the new religion to consist in mere humanity. Comte completed it with his Positivist catechism, calendar and ritual, designed for the worship and commemoration of heroes, sages and philanthropists, and modelled upon the forms of Catholicism. Instead of looking for such a renovated Christianity, however, Dr. Phillipson, consistently with his hereditary creed, projected a fulfilled Judaism or Messianism as the final religion, on account of its containing that essential monotheism which had become corrupted by the followers of Christ and Mahomet. Islamism, too, by James Freeman Clarke, has been classed with Christianity and Judaism as one of the three catholic

monotheisms or unitarian religions which alone dispute for supremacy and universality over all nations and races. And the pantheistic apologists of Brahminism find in it the elements of a universal creed, which is to survive the decay of all other religions.

It is also claimed that the new absolute and universal religion will issue from a coalescence of Christianity with other natural religions, as Judaism has preserved and assimilated the residual truths of the Egyptian and Persian mythologies, only to become itself combined with those of the Grecian and Roman systems. The English and German deists having elaborated the conception of such an essential universal faith common to all nations, some comparative theologians are already endeavoring to define it by collating Christian with heathen forms of religion as objects of scientific study. Max Müller proposes to call it Theoretic Theology, in distinction from that Comparative Theology by which it is to be sustained and illustrated, and would derive its elements from the primitive uncorrupted teachings of the great founders of the ancient religions. Theodore Parker states its problem to be, by means of the human faculties, to gather from Catholic and Protestant, Jew and Gentile, Buddhist, Brahmin and Mahometan, a whole of theological truth, an absolute religion, founded upon nature and common to all men. Mr. Wentworth Higginson, in a lecture on the Sympathy of Religions, argues that all races already agree in the chief articles of natural theology, such as the being of a God, the immortality of the soul and the brotherhood of man. Mr. Samuel Johnson, in his work on Oriental Religions, suggests that the oldest religions may have an important function in purifying that theism still irreverently denounced as infidelity; that the mission of Christianity to the heathen is as much for the modification of its own religious peculiarities as theirs; and that the change from distinctive Christianity to Universal Religion is a revolution, compared with which the passage from Judaism to Christianity itself was trivial. It is claimed by Miss Frances Power Cobbe that the mass of converted Indian youth are becoming mere theists, and the Hindu philosopher, Keshub Chunder Sen, has established relations with English and American

deists, with the view of propagating such a faith as the future common religion of all nations.

At length, to such historical researches and comparative studies have been added still more speculative attempts to project the new absolute religion, such as were made by the Neo-platonists, who sought to extract an eclectic creed from the fusion of Christian with Pagan doctrines in their day. The German idealists, from Fichte to Hegel, having striven to sublimate religion into philosophy, it has been but a step further to evaporate Christianity into mythology, and retain only such residual ideas as are likely to survive the disintegration of all existing religious systems. Accordingly some advanced writers of the school are already propounding this philosophic faith of posterity. Mr. W. R. Gregg, in his Creed of Christendom, after urging that there is no such thing as a revealed religion which cannot be tested by reason, proposes to sift the truth from the error of the Scriptures by a species of Christian Eclecticism, the elements of which he delineates. Dr. Strauss, in his final work on the "Old Faith and the New," having shown that we are no longer Christians, and that a religion, in the ordinary sense, is scarcely now possible, would substitute for it the conception of a law-governed cosmos, developing without a Creator, yet full of life and reason, and to be treated as devoutly as if it were a deity. Emile Burnouf seems to infer, from the history of all religions, that the common germ and essence of all of them is neither an original revelation, nor a barbaric superstition, but a metaphysical theory of the world, which it is the mission of science to demonstrate through its conflict with religion. And Edward Hartmann, in a recent treatise, styled the Disintegration of Christianity and the Religion of the Future, has argued, from the unchristian and irreligious tendencies of liberal Protestantism, to the necessity and possibility of some new universal religion, which shall exhibit the synthesis of oriental and occidental pantheism as the one catholic, philosophic faith of mankind.

The third and last stage of perfect indifference and separation, which has been reached in our day, is that of rendering the natural or rational theology wholly independent of the biblical, and quietly setting aside the Scriptures as no longer

of any scientific authority upon even religious questions. It was but a convenient and logical distinction which the early theists pursued in treating natural religion as a purely rational science preliminary and fundamental to revealed religion, and the later comparative theologians who are studying the contrasts as well as affinities between Christianity and heathenism, can only construct a new apology for the former at the expense of the latter. But a school of deistical and non-Christian writers is now aiming to exalt heathenism to a level with Christianity and exhaust revealed religion in a mere natural or essential religion common to mankind. St. Simon, Leroux, and Comte, as we have seen, endeavored to invest this new religion of humanity with the sanctions, rites and obligations hitherto appertaining to Christianity or Catholicism. Atheistic as such a religion would be, Mr. J. Stuart Mill ventured to suggest that even Christians might find in it an instructive and profitable object of contemplation. Professor Huxley, though depreciating it as mere Catholicism without Christianity, only substitutes for it another which he vaguely describes as a sort of Calvinism without Christianity. Dr. Tyndall, in the same Comtean spirit, has lately proposed special prayers in some hospital ward as a scientific experiment to test the physical value of supplication. And while some are thus attempting to eliminate the Christian element from religion, others seek to introduce into it pagan and even heathen elements. The Westminster Review long since complained that Christian advocates stigmatized pagan antiquity as profane history, alike denying the divine elements in heathenism and the human elements in Christianity. Dr. Thomas Inman in his voluminous work on "Ancient Faiths embodied in Ancient Names," though admitting that the teachings of Christ may have been originally simple and pure, endeavors to trace all Christian as well as Pagan symbolism to a primitive sensual culture, and ventures to associate sacred names and emblems with the grossest ideas and images. Advanced Deists, such as Theodore Parker, Fox and Mackay have maintained that the only real revelation of God is contained in the universe or in the moral constitution of human nature common to all ages and countries, and that Christi-

anity has added little or nothing but a few popular symbols to the truths already uttered in the Athenian prison. Samuel Johnson describes this catholic Deism as now escaping contemporaneously from Brahminical and from Christian dogmas, just as the electric wire begins to encircle the material globe and all the relations of trade, science and politics are becoming œcumenical. Numerous writers on comparative theology without avowing any hostility to the Christian revelation, virtually obliterate it by treating it as a branch of mythology, and Max Müller himself repudiates the old classification of religions into the natural and revealed as wholly useless for scientific purposes.

On the revealed side of the same science, however, may be traced as great departures from the rational theory of religion. In the first stage there was the great Protestant effort to throw off a false scientific theology, the traditional dogmatism of the schools. It was the period when the pure word of God, free from patristic and scholastic comment, was being studied anew, and eager reformers were rejoicing in the full light of a restored divine revelation. Wickliff, Huss and Wessel had led the way as pioneers and proto-martyrs. Luther then appeared as the great popular leader of Protestantism, and by his translation of the Bible into the mother tongue, by his expositions, sermons and theses, by his hymns, controversies and epistles, and above all by his bold apostolic career, gave the movement an impetus which after three centuries is not yet spent. Philip Melancthon, the scholar of the Reformation, wrought into his "Outlines of Theology," the first compendium of the Protestant doctrines which had been drawn from the Scriptures as the common heritage of believers. John Calvin, the great constructive reformer, reduced them to a compact body of divinity in his famous "Institutes of the Christian Religion." At length Cranmer, the victorious martyr, and Knox, who never feared the face of man, imported them into the Churches of England and Scotland; the one incorporating them in the Book of Common Prayer, and the other in the Book of Common Order. And then followed the great Protestant, Reformed and Puritan divines of the ensuing and the present centuries,

together with their Catholic, Arminian and Socinian opponents, all endeavoring, in the light of modern thought and research, to recast the whole Scripture doctrine of God and divine things.

But meanwhile, in the next stage of separation, have still remained the old traditional dogmas concerning the verity, the peculiar doctrines and the final supremacy of Christianity, maintained without respect to the new science of comparative theology which has been struggling into light. As to the verity or sufficiency of Christianity, all orthodox Christians have concurred in treating it as the only true essential religion. Roman Catholics, by their definition of the Church, have virtually repudiated the distinction between natural and revealed religion, and excluded beyond the pale of salvation not merely heretics and infidels, but Jews, Turks, and all pagans and idolaters as followers of false religion. Protestants, while admitting the distinction between natural and revealed theology, have maintained the utter insufficiency of the former, and though generally conceding the salvability of infants, heathen as well as Christian, have nevertheless practically treated all other religions as worthless and their followers as in a state of perdition. At the same time there is a lack of intelligent agreement throughout the Christian world in regard to the exact relations of natural to revealed religion, of heathenism to Christianity, and the extent to which they may have had a common origin or may yet have an ultimate combination.

As to the peculiar doctrines of the Christian religion, the greatest diversity began to prevail at the Reformation. Roman Catholics at once reconstructed their theology, polemically, against Protestantism. The Council of Trent, repudiating the Reformation as a mere heresy, solemnly reaffirmed, by its canons and catechism, the whole mass of patristic and scholastic dogmas as containing the sum of religious knowledge; and this remained the faith of two-thirds of Christendom. Protestant divines, at the same time, proceeded to construct their theology, polemically, against Catholicism. The German churches, repudiating most of the scholastic and some of the patristic dogmas, retained simply the primitive, œcu-

menical symbols, the Apostles', Nicene and Athanasian creeds, in connection with the confessions, apologies and formularies of Luther and Melancthon, emphasizing the great doctrine of justification by faith; and portions of the same system found their way, through Martin Bucer, into the English Liturgy. Various Reformed divines soon constructed their theology, polemically, against Lutheranism, as well as Romanism, in the interest of Calvinism. The Synod of Geneva, repudiating the scholastic and most of the patristic dogmas, retained only the Apostles' Creed, in connection with the confessions of Calvin and Zwingle, emphasizing the cardinal doctrine of predestination; and substantially the same system passed, not only into the confessions of the French Churches, but, through Olevianus and Ursinus, into the catechism of the Dutch Church; through Cranmer and Ridley, into the articles of the English Church; through Knox, into those of the Scottish Church, and ultimately, through the Westminster Assembly, into the standards of the Congregational and Presbyterian Churches of the United States. In these different Churches, however, numerous sectarian divines soon followed, constructing their theology, schismatically, against other creeds, in the interest of some single denomination, congregation or person. In the Roman Catholic Church the Jesuits, under Loyola, and Port-royalists, under Jansen, renewed the battle of Protestantism within the walls. In the Lutheran and Reformed Churches the Anabaptists, under Menno, separated on the question of infant baptism. In the Church of Poland the Unitarians, under Socinus, rejected the dogma of the trinity. In the Church of Holland the Remonstrants, under Arminius, departed from the doctrine of predestination toward universalism. In the Church of England the Presbyterians, under Baxter, dissented from prelacy in favor of a reformed episcopacy and liturgy; the Congregationalists, under Nye, dissented from Presbytery in favor of local polity and worship; and the Quakers, under Fox, dissented from all Churches and rites, in favor of mere inner light and rapture. And in the Churches of the United States, these different sectaries have simply reappeared, sowing broadcast the dragons' teeth of a new brood of heresies, embracing the additional varieties of Methodists and Baptists, and

ranging between the gross Judaism of Mormon and the crude Christianism of Campbell. In a word, for three centuries, throughout Christendom countless sects, following their different leaders, have gone on protesting against Protestantism, reforming the Reformation, purifying Puritanism, dissenting from Dissent, and redividing after each new division, down to the very dust and powder of individuality itself.

As to the final supremacy of Christianity, there is more apparent agreement, with differences mainly as to the means employed. Roman Catholics, consistently with their system, anticipate the future destruction of all false religion through the Jesuit propagandism in Heathendom and the aggrandizement of the papal hierarchy in Christendom. Protestants also look for the predicted disappearance of all anti-Christian error and superstition; some anticipating it as a spiritual triumph of Christianity, effected by divine Providence, in the progress of missions and civilization, and others maintaining that it will be the result of vast political and planetary judgments attending the miraculous return and reign of Christ in a new impending dispensation.

In the last stage of complete separation, we may now behold an independent biblical theology, which would openly repudiate the whole scientific theology as of no dogmatic interest or apologetic value. Some few large-minded divines there may be, such as Ulrici, Patton and Krauth, who discern the common ground between natural and revealed religion, who vindicate the former as fundamental, or at least preliminary to the latter, and who may even seek to bring them into a just harmony, consistent with the supremacy of the one and the integrity of the other; but the treatise has yet to be written which shall reduce them to a systematical body of Christian science. And the vast majority of modern theologians accept this schism as unavoidable and even unimportant. Though the physical and mental sciences are shedding increasing light upon the open page of Scripture, though the ancient religions, with their traditional and innate truths, are coming into closer contact with the one pure revelation, and though the countless sects around us are but fragments, more or less alloyed, of a common Christianity, yet the

great historic Churches, with all their learned chairs and pulpits, still remain in an attitude of mutual avoidance and exclusion, each as to what lies beyond its own pale. The oldest of them, the Greek Church, exscinding Romanism, stands between Heathendom and Christendom, like a venerable ruin, overgrown with traditional dogmas. The Roman Church, exscinding Protestantism, stands at the centre of Christendom, like a beleagured fortress, fulminating its syllabus against all modern science and culture. Even the Protestant Churches, exscinding one another, seem content only to fight their old polemics over again within the lines, or to shut themselves up in the citadel of orthodoxy and turn their fire against their own sentinels and defenders, while the hosts of infidelity are mining and marching around them. And commingled with these various Churches are the innumerable sects, each of which fancies it possesses the only true divine knowledge, that entire religious sense of scripture, reason and nature, which neither the fathers, nor the schoolmen, nor the reformers, nor any later divines, nor yet the sages and saints of all time, had ever before extracted.

And thus theology, under the indifferent spirit, on the one side, would wither away into a mere rational religion, little better than paganism, and on the other side, would be forced into some narrow creed, too insignificant to be named.

The Schism in Metaphysics.

Passing beyond the physical and psychical sciences into the recondite region, common to them all, denominated metaphysics or ontology, the science of absolute being, we shall there find the two antagonists, the sciolists and dogmatists, ranged in opposing lines, like two marshalled armies, through the entire field of thought and research.

On the rational side of metaphysical science, in its first and legitimate stage of departure, efforts were made to disentangle it from the subtleties of the scholastic divines. It was the time when emancipated thinkers were sifting and testing anew the traditional distinctions between essences and accidents, thoughts and things, and probing afresh the perennial problems of absolute existence, causality and infinity, which had

been so long merged in theological dogmas. As early as the fifteenth century, the Dialectic of Plato and the First Philosophy of Aristotle were revived outside of the cloister in the great schools of Florence and Padua, and thus brought into living connection with the new metaphysical thought of the modern world. Lord Bacon then, for the first time, sharply distinguished the provinces of physics and metaphysics, assigning to the former the investigation of material phenomena and forces, and reserving for the latter the inquiry into essential forms and final causes. Descartes began the work of constructing metaphysical science, in the region of rational psychology, by defining the soul as a thinking substance or essential reality manifested in consciousness. Spinoza followed, in the region of rational theology, with his definition of God as the one absolute substance, of which all other existences are but modifications. Leibnitz, in the region of rational cosmology, carried the notion of active substances, infinitesimal forces, metaphysical points, throughout the sensible world. Christian Wolf, then traversing the entire region of ontology with encyclopædiac range, systematized the three metaphysical sciences of Descartes, Spinoza and Leibnitz, propounded their various problems, and endeavored to solve them by means of demonstrative reasoning. At length Kant, as the greatest of metaphysical critics, by distinguishing between phenomena and noumena, between the subjective ideas and the objective realities of God, the soul and the world, performed the important service of detaching ontology from phenomenology, or at least rational from empirical psychology, cosmology and theology, leaving the rational no other support than his so-called practical reason. And since that time, in spite of his protest against all future metaphysics, a host of astute thinkers, such as Fichte, Schelling and Hegel, Herbart, Beneke and Lotze, Shopenhauer, Hartman, Ueberweg, Trendlendberg and Ulrici, have been striving to construct a scientific ontology or theory of absolute and infinite being, as regulated by logical and empirical laws.

Meanwhile, in the second separative stage, the revealed doctrines of the trinity, the incarnation and the atonement have been gradually ignored or superseded by various hypotheses

concerning the origin, development and destiny of the universe, considered as embracing both man and nature and involving the realities of the soul, the world and God. As to the first of these problems, the origin of the universe, there have been the two rival opinions of dualism and monism. According to the former, all existence has originated in two distinct principles, the one spiritual and the other material. It had been held by the followers of Zoroaster and the Magi, that the mixed state of things in the world is due to a good and an evil principle, Ormuzd and Ahriman, in conflict throughout the whole creation. The Greek philosophers, Anaxagoras and Empedocles, had also sought to trace the physical universe to active and passive principles, such as mind and matter, love and hate. The Gnostics, in the second century, and the Manichæans, in the third century, combining the Persian dualism with the Hebrew doctrine of good and bad angels, had regarded God and chaos, Christ and Satan, as conflicting powers in creation; and even Lactantius went so far as to represent the two latter as the first and second-born son of the Father, the right and left hand of God. Though the opposite dogma, of an absolute production of all things from nothing, prevailed at length in the Christian Church, yet there were mystical sects in the middle ages, who revived the Manichæan notions of the eternity and sinfulness of matter, of a pre-existent chaos and of diabolic opposition in creation. Traces of the same view have continually reappeared since the reformation in the writings of both Catholic and Protestant divines, who have depicted creation as ever involving a struggle between the opposing powers of light and darkness, more or less incompatible with the divine unity and supremacy. Deistical writers have also striven to place the world and God in a state of mutual independence. And with the extraordinary growth of speculative thought in our day, the notion of a dual origin of things has been assuming more scientific guises.

It has appeared in the region of rational cosmology among the physical sciences. Leading physicists and chemists, with more or less metaphysical purpose, have maintained a duality of matter and force known as dynamism. Newton, though

an atomist, could only conceive of force as an expression of mind, of some voluntary agent imparting it to the ultimate atoms of matter in the form of attraction, repulsion and other occult energies. Leibnitz regarded the atoms themselves as intrinsically active substances termed monads. Boscovich, in his dynamic theory, treated them as metaphysical points or centres of attraction and repulsion. Dalton, Herschell and Clerk Maxwell have retained similar views. Leading biologists also have maintained a duality of matter and life known as vitalism. In the earlier speculations upon organized beings there had always been supposed some immaterial principle or cause of life, such as the psyche of Pythagoras, the archæus of Paracelsus, and the anima of Stahl, who went so far as to imagine that it unconsciously moulds the body and presides over all its functions. Berthez termed it the vital principle or vital force to distinguish it from the physical and chemical forces which govern inorganic matter. Bichat lodged it in the animal tissues under the name of the vital properties. Buffon endeavored to discriminate between organic and inorganic molecules, the former composing dead or lifeless matter, and the latter animate or living matter. And Lionel Beale still adheres to similar opinions in his speculations upon protoplasm or the matter of life.

The same tendency has shown itself in the region of rational psychology. The chief votaries of the science have long held a duality of matter and spirit known as spiritualism. Descartes seems to have begun this movement by distinguishing mind and matter, soul and body, as separate substances, the one endowed with thought and the other with extension, and both mechanically interacting by divine concourse. Leibnitz and Wolf substituted for the Cartesian dualism a pluralism of graduated substances or monads, both material and spiritual, whose mutual agreement, like that of two synchronous clocks, is due to a divine pre-established harmony. Kant then, by his distinction between phenomena and noumena, maintained a dualism of the ideal and the real worlds, but left the mode of their correspondence and interaction in obscurity. And after numerous forms of idealistic monism had prevailed in the Kantian metaphysics, a

reaction has brought back the dualism of Descartes and the pluralism of Leibnitz. Herbart, Beneke, and Lotze have been re-defining the soul, in distinction from the body, as a spaceless essence, a spiritual atom, a psychic force, endowed with the immaterial properties of thought, free will, and immortality; and have still farther widened the Kantian dualism by numerically separating things from thoughts, co-ordinating psychical with physical processes in plants and animals throughout external nature, and rendering even the elements and atoms sensitive and conscious. Dr. Krauth has shown that Berkeley, though holding a form of spiritualistic monism, conceded a dualism of the Infinite Spirit as the cause of ideas and the finite spirits receiving those ideas; and has himself recognized in the one human person a duality of soul and body, the former implicated with the latter, not like a spider in a cobweb of nerves, but as a sort of vice-creator, immanent yet dominant in its own little creation.

But the dualistic tendency has come to full effect in the region of rational theology or general ontology. Theistic metaphysicians in the schools of Schelling and Hegel, protesting against the reigning pantheism, have insisted upon a grand original duality of God and the world. Christian Hermann Weisse, as a critic of Hegel and disciple of Schelling, took for his idea of Deity a personal God, distinct from the world, yet manifested in it under the form of a trinity of nature, man and art. Immanuel Hermann Fichte, as a follower of the elder Fichte and of Hegel, in his Speculative Theology and Theistic View of the World, postulated for the absolute First Cause a rational Creator, immanent in his own creation, yet independent of it, and logically producing all things out of nothing, according to the laws of thought. Hermann Ulrici, in his works entitled Speculation and Exact Science, God and Nature, has maintained that the Creator is not only independent of His creation, but absolutely superior to it, as the one eternal author and disposer of the universe, which he both postulates as rational and develops as real. Other German thinkers, such as Carriere, Calybaus and Günther, have held that the world, so far from emanating or being produced from God, is created and maintained

in antithesis to Him by an objective exertion of His power. And some English and American writers, such as Chalmers, Martineau and Mahan, for the sake of the teleological argument in natural theology, have rashly conceded the co-eternity with God, not merely of time and space, but of matter and nature, as external and independent existences. It appears therefore that, in the end, an extreme dualism would co-ordinate mind and matter as two distinct essences both in man and in nature.

According to the rival school of monism, however, all things originate in but one essential principle, material or spiritual. Though the oriental religions and earlier western philosophies were mainly dualistic, yet gradually there grew up some purely spiritualistic theory of the world, such as that of Parmenides, who identified being with thought, or some exclusively materialistic theory, like that of Epicurus and Lucretius, who held that the entire universe, including both animate and inanimate things, souls as well as bodies, and even the image-like gods themselves, had arisen by a fortuitous concourse of atoms, as the results of endless compositions and recompositions of the original particles of matter. Among the fathers a Tertullian may have attributed a refined corporeity to God, and among the schoolmen a John Erigena may have ascribed a divine ideality to the world, while an Amaury and Dinant, by identifying the Creator with primordial matter, may have broached a sort of materialistic pantheism. But it was not until the Reformation that Gassendi began that materialistic movement, and Spinoza that pantheistic movement, which led to the extreme forms of monism in our day.

In rational cosmology the tendency has shown itself as a reaction from its opposite. The duality of matter and force has been renounced by modern atomists, such as Moleschott and Büchner, who have revived the crude materialism of Democritus and D' Holbach, and are maintaining the properties of attraction, repulsion and affinity to be inseparable from the particles which manifest them, and, indeed, inconceivable without them, according to their maxim, "No matter without force; no force without matter." The distinction between dead matter and living matter has also been disappearing from

the view of some recent biologists, as one vegetal and animal process after another has been referred to purely physical and chemical laws. Professor Huxley lately maintained that protoplasm, the original organic matter of all living beings, is composed of the same atoms as ordinary lifeless matter, and differs from it only in the manner by which they are aggregated; so that there is no more reason for explaining vital phenomena by a supposed principle of vitality than to speak of aquosity as a cause of water. It is claimed that organic processes, such as digestion, can be artificially imitated, and even that living beings may be produced by chemical experiment.

In rational psychology the same tendency has appeared in opposite directions. On the spiritualistic side, since Berkeley maintained the existence of nought but percipient minds, the various schools of idealists have been striving to reduce material properties, light and heat, gravity and figure, even time and space, into mental activities, perceptive and conceptive, until they have lost sight of all matter in mere mind. But, at the same time, on the materialistic side, since Locke suggested the possibility of cogitative matter, the different schools of sensationalists have been referring the same properties to sensible objects and resolving sensation, reflection, volition, the mental faculties themselves, into material processes, nervous and cerebral, until they have lost sight of all mind in mere matter. And with the duality of reason and sense has at length wholly vanished the fundamental distinction between body and soul, as the new school of physiological psychologists has sought to blend the laws and processes of the one with those of the other. Maudsley has defined the mind as a mere natural force, like any chemical force in the organism. Husche has likened the relation between thought and the molecular movements of the brain to that between color and the vibrations of ether. It was a motto of Feuerbach, "Without phosphorus, no thought." Huxley has merged the will in the animal automatism as mere potential energy. And Vogt has classed the moral feelings and faculties as bodily organs and functions.

But it is in the realm of rational theology that the monistic tendency has reached its climax. Whilst the pantheistical

disciples of Schelling and Hegel have been unfolding a sort of universal idealistic monism, a class of atheistic metaphysicians has reached a corresponding species of materialistic monism by deriving the totality of existence from matter alone as the sole original substance of the universe, and the grand duality of God and the world has been abandoned and lost. Shopenhauer and Feuerbach have resolved the very idea of deity into a mere phantasm of the brain or illusion of sense. Büchner, in the baldest way, has advocated the infinity, eternity, and indestructibility of matter, and treated all forms of existence, both animate and inanimate, as its mere fatalistic combinations. Strauss has declared that idealism and materialism are a mere quarrel about words, both having a common foe in that Christian dualism which has so long opposed the soul to the body, time to eternity, and an eternal Creator to a created and perishable universe. And thus an extreme monism would merge together all forms of mind and matter in some one absolute principle pervading both man and nature.

As to the second great metaphysical problem, the development of absolute being, there have arisen the two rival schools of creationism and evolutionism. According to the former, the whole universe, both spiritual and material, has proceeded from Deity by successive acts of creation. It was the dogma of the ancient and mediæval Church, from Augustine to Aquinas, and also of Protestant as well as Catholic divines, that the heaven, or angelic and purely spiritual world, was first created, and afterwards the earth, or purely material world, and then man, with a dual nature, partly material and partly spiritual, and that ever since plants, animals and men have been produced and sustained by distinct acts of divine power, wisdom and goodness. And this dogma, in the progress of modern thought and research, has been cast into scientific forms as a metaphysical theory of the world, from its origin to its consummation. Descartes, Leibnitz and Samuel Clark have been followed by hosts of speculative theists, in referring the universe to an infinite and absolute person or Spirit, whose power, wisdom and goodness are manifested, throughout nature and history, in cumulative stages of crea-

tion and providence. Newton, Herschel, Clerk Maxwell and numerous other devout physicists, have regarded all forces and atoms throughout the inorganic world as the subordinate agents and manufactured articles of a Creator, whose will is the primary source of all mechanical and chemical energy, and whose mind is expressed in all dynamical laws. Cuvier, Agassiz and Guyot, with many other naturalists, have treated all vegetal and animal species, throughout the organic world, as archetypes or ideals, first conceived by God, and then successively executed, through one geological age after another, in a series ascending from the mollusk up to man, the end and climax of the whole animal creation. Bossuet, Edwards, Buchez, together with a new rising school of scientific historians, have been referring all political and religious phenomena, throughout the social world, to divine dispensations of justice and mercy, following one another in pre-established order from the Fall of Adam, the Flood of Noah, and the Coming of Christ, to the final judgment and millennium. And thus the entire universe, material and spiritual, has been exhibited by theistic metaphysicians as a series of separate divine creations.

According to the opposite school of thinkers, the totality of existence proceeds from some primitive substance or principle, under fixed laws of evolution, embracing all mental as well as material phenomena. It was an opinion of many Greek and Roman philosophers, from Democritus to Lucretius, that the original atoms or particles of matter, combining and re-combining in mathematical proportions have successively given rise to the solid forms of minerals, plants and animals, the more ethereal souls of men, and even the visionary gods themselves, sitting aloft as indifferent spectators of the ceaseless ebb and flow of nature. And though such opinions were superseded in the Christian Church, or but occasionally blended with pantheistic views of creation and providence, yet in the progress of modern science, they have begun to acquire the pretensions of a metaphysical theory of the entire development of the universe, through all its material and spiritual stages. Spinoza and Bœhme have been succeeded by idealistic pantheists, such as Schelling and Hegel, aiming to un-

fold the sum of existence, nature, humanity, deity, out of absolute reason, under logical laws, from the emptiest notion of nothing to the fullest idea of existence. Gassendi and Hobbes, as restorers of the ancient atomism, and Leibnitz and Boscovich, as forerunners of the modern dynamism, have been followed by materialistic atheists, such as Büchner, Vogt and Strauss, maintaining the absolute infinity and eternity of matter as ever combining and re-combining under its present forms; and by mathematical physicists, such as Grove, Mayer and Helmholtz, advocating a gradual correlation and conservation of force in the nebula, the sun and the planet throughout the inorganic universe. Lamarck, Gœthe and Monboddo have been followed by speculative naturalists, such as Bastian, Darwin and Hæckel, who argue for a continual evolution and survival of species throughout the organic realm among plants, animals and men, from the lowest up to the highest forms of life. Vico, Turgot and Herder have been succeeded by scientific historians, such as Buckle, Draper and Quetelet, who hold that nations, races, the whole human species proceed under periodic and progressive laws in art, science, politics and religion, from the rudest stages of barbarism up to the most refined forms of civilization. At length such special views, by a class of atheistic or non-theistic metaphysicians have been gathered into the imposing picture of a universal and perpetual evolution. Herbert Spencer is endeavoring to trace the development of all phenomenal existence from persistent force, under a law of progressive hetereogenity, from the atom up to the orb, and from the animalcule up to the commonwealth. Professor Huxley declares that the whole existing world once lay potentially in the cosmic vapor, and that from a knowledge of the properties of its molecules, it would have been possible to predict the present state of the British flora and fauna as easily as one might tell what would happen to the vapor of the breath on a winter's day. Doctor Tyndall has not only admitted that all our politics, art and philosophy may thus have been latent in a fiery cloud, but has recently startled scientific as well as religious circles by proclaiming, from the chair of the British Association, that in the original matter of the world he beholds the promise and po-

tency of every quality of life. And thus the entire course of the universe, by the extreme evolutionists, would be exhibited as one continuous development without divine forethought or intelligent design.

As to the third great metaphysical problem, the destiny or design of the universe, there are now emerging the two rival schools of optimism and pessimism. According to the former, the existing world is the best possible. Greek and Roman philosophers, from Plato to Cicero, had dwelt upon the order and beauty of the cosmos or mundus, and thus illumined somewhat the tragic fatalism of the heathen mind. Christian fathers of the East and West, from Clement to Lactantius, had exhibited the creation as beneficently designed for the good of man. Even the despairing mediæval view of the world and of life had been relieved by the prospect of a new creation, adorned with the beauty of holiness. And at length, in the wake of Protestant free thought and scientific research, began to appear the more philosophical optimism of the present day.

It was at first very largely theological in its character. Campanella, among his many paradoxical opinions, had already broached several optimistic views; that God is the source of right and wrong; that evil is a mere negation, and ever overruled as an occasion of good; that famine promotes emigration, wars destroy tyrannies and heresies, and the worst crimes may benefit society; and that even error provokes the search for truth, and sin itself is but ignorance. Leibnitz, the founder of modern optimism, in his Theodicea, maintained that an infinitely wise and good God could not but select the best of all possible worlds for creation, that evil is a necessary imperfection of the creature, and in different grades of creatures the means to a higher good. Bishop Butler, whilst holding that none of the attempted solutions of the problem of evil are adequate, admitted that the virtue and happiness of creatures must be the chief end of a wise and good Creator, though the best means to the attainment of that end may not as yet be comprehensible. President Jonathan Edwards taught that the end for which the world was created, was the divine glory which would be illustrated by the perdition of sinners, no less than the redemption of saints. Many other divines

have associated orthodoxy with the notion that creation itself is a degradation, a falling short of the infinite, and that there must, therefore, be a minimum of evil in all finite creatures, as they could no more be infinite in holiness than in power or wisdom.

But the modern forms of optimism have become much more metaphysical. The spirit of Leibnitz prevailed largely in German thought till the time of Hegel, who held that whatever is, is rational; that the development of the infinite is logical, and the goal of the process a triumph of absolute reason. Cousin, on the basis of the Hegelian metaphysic, maintained the whole history of philosophy and humanity to be rational, defended war as the necessary conflict of ideas, and argued that truth and right were always victorious over wrong and error; while Blasche and Rosenkrans have gone to the length of maintaining that evil itself is but the necessary contrast of good. The Italian Catholic metaphysicians, Rosmini, Gioberti and Mamiani, have repeatedly maintained that the Creator cannot but produce the best possible worlds, as from a casket of golden coins can only be drawn golden coins; that the development of nature, mind, and religion itself, is logical; and that evil ever diminishes as the finite approaches the infinite, in the progressive union of which the creation finds its highest end.

At length, however, the most recent optimism has been forced into an apologetic position. The rise of subtle forms of pessimism in Germany has provoked attacks upon their metaphysical premises. I. A. Fichte, in his Theistic View of the World, endeavors to vindicate a true optimism against modern pessimism, by tracing the root of evil to the necessary independence and possible degeneracy of creatures, and by showing its perfect remedy through a general and special Providence. Dr. Volkelt, in his studies on the Philosophy of the Unconscious, traces the recent pessimism to the Hegelian doctrine of universal development through contradictions, the negative and positive sides of which have been produced by Shopenhauer, with his doctrine of absolute will, and Hartmann, with his doctrine of co-ordinate will and reason, and then brought into full consciousness by Bahnsen, with his doctrine of con-

flicting will and reason. Dr. Weygoldt, in his Prize Essay on the same subject, refers the pessimism of the age to political discontent, the decay of religious faith and hope, and generally the conflict of the actual with an ideal society as aggravated in some individuals by abnormal melancholy, and insists that its metaphysical arguments are a mere reasoning in a circle, while its ideal future can only be fulfilled by a sound optimism.

According to the pessimists, however, the existing is the worst possible world. And the opinion is of ancient as well as modern growth. The Hindoo mind, for ages, had looked upon existence itself as guilt, upon the universe as an illusion or abortion, and upon re-absorption in Brahma or annihilation in Nirwana, as the only boon of mortals, to be reached after thousands of successive births and deaths. The Greek and Roman Epicureans endeavored to drown the thought of a causeless and purposeless universe in sensual pleasure. It is claimed by modern pessimists that the highest wisdom of the Hebrews was expressed in the dirges of Job and Solomon on the misery and vanity of life, and that Christianity itself, through its doctrine of sin, had produced a breach between God and the world, requiring the destruction of the latter as vain and worthless. And though the fathers, excepting the Manichæans, had taken a more optimistic view of the origin and object of creation, yet among the scholastics and reformers, the gloomier dogmas of the Church were sometimes pushed toward that pessimistic extreme which the skeptical literature and poetry have since developed. Voltaire opened the movement with his satire upon the optimism of Leibnitz. Byron gave voice to the rising tendency in his Childe Harold and Cain; Shelley in his Queen Mab and Prometheus; and Goethe in his Faust; with occasional echoes in Tennyson, Thackeray and Matthew Arnold. But at length it has reached full metaphysical expression as one of the latest results of German thought. Kant may be said to have taken the first step when he undermined the theistic arguments, especially the teleological, and urged that no theodicea was tenable. Hegel may have unwittingly admitted a pessimistic element into his theory of the world, by dwelling upon the contradictions, struggles and sorrows of

the whole finite development of the absolute reason. Shopenhauer, the founder of modern pessimism, consistently with his atheistic idealism, then represented the Kantian noumenon as the will, and accepted the world as a mere visionary phenomenon of blind universal force, without rational cause or purpose, and only worthy, therefore, of a sort of conscious annihilation, or continuance under protest. Hartmann, combining Shopenhauer with Hegel, now finds the root of the world in unconscious force and reason, with the latter triumphing over the former throughout nature and history, and ending in a sort of ultimate redemption, which serves only to alleviate individual misery, with illusive strivings after a happiness unattainable in this life or in the next. Julius Bahnsen, defiantly advancing with Hegel beyond both Shopenhauer and Hartmann, declares that the conflict of reason and force is both universal and irreconcilable, that absolute purposelessness reigns in the midst of apparent manifold design, and that one world-period logically follows another only as a corpse breeds vermin, making life a hell from which there is no outlet, and dull resignation the only philosophy.

In the third and last stage of separation we now find a metaphysic asserting its independence of all revealed religion. In some of the earlier ontological speculations it may have been both convenient and reverent to use such technical terms as the Absolute, the Infinite, the First Cause, instead of the sacred names of God employed in common life and worship; and there may have been a great advantage in protecting the metaphysical as well as physical sciences from the encroachments of rash theologians who were in haste to attribute divine intentions in nature and history which are unfounded and misleading. But a class of metaphysicians has arisen who would evaporate the Absolute and Infinite into mere abstractions or impersonal powers, with no correspondent divine realities, and who will not admit into the obscure province of metaphysics any light of revelation concerning the nature of the First Cause and the course and object of the universe, about which they speculate so freely. The imposing theories of the world which have followed one another in the schools of Germany, from Kant to Hartmann, are but so many vain

attempts to solve the most peculiar problems of revealed cosmology, or, as Hegel himself expressed it, to re-think the whole thought of the Creator through all the logical categories of His creative process. And this unphilosophical exclusion of the chief source of true metaphysical knowledge has become conscious and avowed in the schools of Comte and Spencer, whose principles would render any divine revelation of the Absolute Cause of the universe simply inconceivable and impossible. Especially is it shown by those discursive scientists who, without calling themselves metaphysicians, are indulging in the freest speculations upon the origin of life, and mind, and design in nature. Sir William Thomson seems to have illustrated it, either ironically or unwittingly, in his Presidential Address at Edinburgh, when he proposed to explain the first appearance of living germs upon our earth, without invoking an abnormal act of Creative Power, by referring them to life-bearing meteors which had brought them from other planets. Professor Tyndall, in his Belfast Address, after sketching the evolution of all animate nature and human consciousness from primitive atoms as the seeds of things, termed the whole process, the manifestation of an absolutely inscrutable Power, and discarded the theory of a Creator as that of a mere man-like artificer. Professor Huxley, in his Evidence of Man's Place in Nature, holds to a similar great natural progression, without any intervention, from the formless to the formed, from the inorganic to the organic, from blind force to conscious intellect and will; and has declared that the doctrine of natural selection gives the death-blow to teleology by requiring no more forethought and design than is seen when the winds of the Bay of Biscay select the sands from the plain, or a frosty night preserves the hardy instead of the tender plants. And Professor Hæckel, as a materialistic monist, in his Natural History of the Creation, renouncing the theory of Agassiz as but the absurd anthropomorphic doctrine of a Creator, declares that the forming of the crystal, the flowering of the plant, the generation of animals and the mental activity of man, are alike due to mere mechanical, undesigning causes, and, in fact, that in the so-called economy of nature no such thing as design exists, any more than the much vaunted goodness of the Creator.

On the revealed side of metaphysics, meanwhile, have ensued corresponding departures from the rational theology and true theory of the world. In the first and legitimate stage, efforts were made to extricate revealed divinity from the false metaphysics of the middle ages. Luther, Melanchthon, Calvin and other learned reformers led the way, by their attempts to reconstruct theological science upon a strictly scriptural basis, free from patristic and scholastic conceits concerning the mysteries of the trinity, the creation and the atonement. Buddeus and Mosheim in Germany, and Henry More and Cudworth in England, followed with their more positive efforts to support Christian theism with the metaphysical principles which the new Protestant thought was developing. Dr. Samuel Clarke, as an antagonist of Leibnitz, sought to demonstrate the Divine being and attributes by speculations upon contingent and necessary existence, and also attempted a metaphysical explanation of the Trinity. Bishop Butler, in his Analogy, proposed a hypothetical reconciliation of the articles of natural religion with the theory of universal necessity, and even exhibited the great central doctrine of redemption as but the highest expression of divine principles pervading all nature and society. At length Dr. Christian Wolf brought metaphysical theology to a crisis with his attempt to resolve the most peculiar doctrines of the Christian religion into philosophical tenets, upheld by demonstrative reasoning. And since then each succeeding school of German metaphysics has had its wing of speculative divines, such as Schleiermacher, Marheineke and the younger Fichte, endeavoring to identify the Absolute as Jehovah, to retrace creation as a logical process, to reconstruct the trinity as a trilogy, and thus establish the coincidence of the rational with the revealed theology and cosmology.

At the same time, however, by the great mass of orthodox divines, the distinguishing dogmas of revealed religion, the trinity, creation, providence and redemption, are still held in their traditional form, with little or no reference to recent speculations upon the origin, course and destiny of absolute being. As to the trinity, the patristic and scholastic definitions remain substantially unchanged. The Greek Church

still adheres to the Nicæan and Constantinopolitan decrees, that there are three persons in one Divine being, the Father, the Son and the Holy Ghost; that the Son is of the same, and not merely of like essence with the Father, and that the Holy Spirit proceeds from the Father alone. The Roman and Anglican Churches retain the same symbol, with the added clause, "filioque," adopted by the third synod of Toledo, declaring that the Holy Spirit proceeds from the Father "and the Son." The principal American Churches also hold the trinity, and it still characterizes the whole Christian world with the exception of the Unitarian bodies which have revived the opinions of Arius and Socinus, that Christ is but the noblest of creatures, or a mere man, and the followers of Swedenborg and Zinzendorf, who have departed from the traditional view of the relationship of the three divine persons.

As to the dogmas of creation and providence, a like agreement prevails. Greek and Roman authorities still follow the fathers and schoolmen in maintaining that God, the Father Almighty, has created the world from nothing, through the Son, as His expressed reason or logos; that the creation, as it came from His hand, was perfect and pure, and that by the sin of the creature alone it was marred and perverted, and not through any mere necessary defect or privation without moral quality. The Reformed Churches seem to have only emphasized such views of the creation, and re-defined with more clearness the doctrine of Providence as being a continued manifestation of the triune Jehovah in the preservation and government of the world, both general and special, consistently with occasional miraculous suspension of natural laws, as well as with the freedom and responsibility of the human will. As to the doctrine of redemption, there is scarcely less agreement among orthodox divines. While some may distinguish the divine glory, and others human happiness as the end or design of the Father in creation, all concur that both objects are achieved through the incarnation, atonement and ascension of the Son, and by the ministry of the Holy Spirit, and that the great consummation will involve the abolition of sin and death and the regeneration of man and nature.

In the third schismatic stage we now behold a biblical

cosmology, which seeks to exclude from itself all metaphysical science as profane and worthless. At the dawn of the great reformation of religion it was not strange that zealous evangelists, like Spener and Wesley, should prefer practical piety to a mere speculative orthodoxy; nor indeed is it now surprising that godly divines, such as Tholuck and Hodge, should be jealous of an excessively metaphysical discussion of theological problems as tending to arid intellectualism or rationalism. But there is a class of biblical cosmogonists or theological world-builders who would neither allow the legitimate exercise of the speculative propensity upon the problem of the universe, nor seek to meet its cravings with that solution afforded by divine revelation. Though their own theologies and theodiceas are based upon metaphysical principles, derived from pagan as well as Christian sources; though school after school of thinkers have been waging logical warfare around them like the battles of giants; and though at length has been elaborated that ideal of an Infinite and Absolute Reason pervading nature and history, which can only be realized in the triune Jehovah, who is Maker, Saviour and Judge of the World, yet they are content still to represent the Creator as a wearied artificer, resting from His work, the creation as a mechanism with which He constantly interferes, and the creature as an anomaly in His creation.

And thus the metaphysical sciences, as torn asunder by the indifferent spirit, would either, on the rational side, relapse to mere godless abstractions, or on the revealed side, shrivel into lifeless dogmas.

The General Rupture in Philosophy.

Mounting at length above the sciences into that lofty region of Philosophy, where they are themselves to be studied in the pure light of reflection, we shall discover the two antagonists propounding opposite theories of knowledge, like high contracting sovereigns, with their distant armies encamped in full view.

On the rational side of philosophy, as in each science, may be traced a gradual severance of reason from revelation, the chief source of divine knowledge. In the first of the three stages

came the legitimate rise of free thought against a false revelation, against the pretended infallible teaching of the Roman Church. It was the time when the human intellect was breaking from the shackles of priestly authority and asserting its claim to the whole domain of research. As early as the fourteenth century Roger Bacon, the prophet and proto-martyr of Christian philosophy, had issued his "Great Work on the Utility of the Sciences," projecting a chart of all future knowledge, quite ahead of his age, and exposing the existing causes of human ignorance, such as authority, custom, prejudice and conceit, only himself to fall a victim to their malignity. Marsilio Ficino, the scholar of the classical revival, with the help of the Greek Pletho and Cardinal Bessarion and under the patronage of the Medici, had introduced from Constantinople, through the Florentine Academy into Western Europe, that elegant literature which was destined to become the chief instrument of modern philosophical culture. Theophrastus Paracelsus, as the pioneer of philosophical mysticism, had claimed that faculty of universal insight, which was yet to find its bloom in Swedenborg. Michel Montaigne, as the pioneer of philosophical scepticism, had raised that spirit of universal doubt, which was yet to come to its crisis in Hume. Pierre La Ramèe, the logical iconoclast, had assailed the idolatry of Aristotle with his "New Dialectic," and led the way to that more natural process of reason which the later logic has matured. Thomas Campanella, the immediate forerunner of Bacon, had already issued his "Precursor of Restored Philosophy," boldly summoning his age from the logomachy of the schools to the fresh study of nature. Francis Bacon, the father of modern empiricism, in his "Great Restoration of the Sciences," then dealt the fatal blows at those illusive prejudices in the race, in the individual, in common life, and among the learned, the idols of the Tribe, the Den, the Market and the Theatre, which had so long been obstructing the advancement of knowledge; and at the same time, with his new logic, prescribed the method of that natural philosophy which Copernicus, Galileo and Kepler were already practising. René Descartes, the father of modern transcendentalism, soon following with his "Discourse on the Right Conduct of Reason

in the Sciences," premised the mental and moral rules of all sound investigation and, with self-consciousness as his only guide, entered the realms of metaphysical philosophy, followed by Malebranche, Spinoza and Leibnitz. Jean D'Alembert, the first modern encyclopædist of the physical sciences, organized them in the celebrated French Dictionary, according to the classification of Bacon, and lucidly discussed their order, method and connection, as unfolded by the great leaders who have successively seized and transmitted the torch of knowledge. Christian Wolf, the first modern encyclopædist of the metaphysical sciences, systematized the fragmentary teachings of Leibnitz and formulated the abstruse problems of ontology, cosmology and psychology, which had been passing, unsolved, through the schools. Thomas Reid, the protestant of common sense, now recalled philosophy for a moment from the vagaries into which it had been led by Berkeley and Hume. Immanuel Kant, the unrivalled critic of human reason, then achieved a Copernican revolution in philosophy, by supposing that the mind moulds the world as well as the world the mind in the process of knowledge, and thus started that twofold movement which has issued in the idealism of Fichte, Schelling and Hegel, and the realism of Herbart, Beneke and Lotze. George Wilhelm Friedrich Hegel, the most subtle spirit of our epoch, at the summit of the idealistic movement, projected his magnificent "Encyclopædia of the Philosophical Sciences," embracing Logic, Nature and Spirit, Art, Religion and Philosophy, in one consummate system of absolute knowledge. Auguste Comte, the modern Bacon, at the opposite extreme of empiricism, attempted a similar "Philosophy of the Positive Sciences," reducing them to an historic series and announcing their methods, limits and laws. And more recently hosts of other great thinkers from various schools, such as Cousin, Littré and Janet, Mill, Lewes and Spencer, Ferrier, Calderwood and Fraser, Hickok, Seelye and Krauth, Trendelenberg, Ueberweg and Ulrici, have been pouring forth the most abundant materials for that one ultimate philosophy or science of sciences, which is yet to be collected out of the sciences themselves, considered as intellectual phenomena, subject to logical and historical laws.

Meanwhile, however, the next stage of departure appeared thronged with mere speculative philosophers, utterly ignoring that true revealed knowledge which still remained unimpeached. These, instead of the doctrines of the inspiration, illumination and fulfilment of Scripture, substituted their various conflicting hypotheses concerning the origin, the method, and the goal of science, or true philosophical knowledge. As to the first problem, the origin of science, there arose the two rival schools of idealists and realists. According to the former, our knowledge embraces mere ideas. And the opinion was one which had been long and widely prevalent. The entire oriental mind, for ages, had been idealistic. The Hindoos of old had mused upon the world as but a vast illusion or dream of Brahma. The Greeks had looked upon all visible things as but unreal images, shadows, copies of original, essential archetypes, after which they had been fashioned. The fathers, Justin, Origen, Clement, who espoused the Platonic doctrine of divine ideas, had conceived of the whole intelligible creation as only a manifestation of the eternal Logos, the embodied reason or word of God. The schoolmen, who adopted the Aristotelian distinction between the form and matter of objects, had even discussed their external existence as problematical (especially in the Eucharist) but for the authority of the Church. The Platonic reformers, who revived classical with sacred learning, had striven to enlist such spiritual conceptions in the service of pure religion. And gradually, with the rise of philosophic thought, came more scientific phases of the same tendency.

The first was theistic, restricting our knowledge to divine ideas. Descartes, the acknowledged father of modern idealism, led the way by describing ideas as mere mental representations of material objects, excited in the mind on occasion of the senses by immediate concourse or assistance of Deity, whose veracity must guarantee their accuracy. Malebranche, as a disciple of Descartes, in his "Search for Truth," then added the celebrated theory of Vision in God, according to which material objects, as impressed upon the senses, are represented in the divine mind and beheld by our minds as in a perpetual theophany or divine phantasmagoria, attested by the

Holy Scriptures and the Catholic Church. John Norris, an English rector, who had studied Plato as well as Descartes and Malebranche, followed with his "Theory of the Ideal or Intelligible World," in which the vulgar belief in material objects, as distinguished from their mental representations, was based upon the mere veracity of God, their creator and constant revealer. At length Arthur Collier, a recluse thinker who held the parish next to that of Norris, repudiating the appeals to common sense and Church authority as unphilosophical, boldly pushed theistic idealism to a climax with his "Clavis Universalis or New Inquiry after Truth, being a Demonstration of the Impossibility of an External World," or, as he elsewhere expressed it, of the dependent existence of the visible world, or of the inexistence of the sensible world in the mind of man, and of the inexistence of the mind of man in Christ, and of Christ in God, the source of all thought and being. And these different views, as we shall see, were variously applied to the problems of Holy Scripture by such idealists as Arnauld, Nicole and Crousaz.

The next phase of the same tendency was a phenomenal idealism, which would restrict our knowledge to mere phenomena or ideal qualities. Locke, with all his realism, had retained several idealistic elements, such as his ridicule of a substance supporting qualities, like the fabled elephant upholding the world; his assertion that the secondary qualities, heat, color, sound do not exist in material objects, but only in the percipient mind; his definition of knowledge, as maintained only through the intervention of ideas and measured by their conformity with realities; and his admission that the existence of things out of the mind, though certain enough, does not allow of demonstration. Richard Burthogge, a physician who corresponded with Locke, seems to have controverted or developed some of his views in an "Essay on Human Reason," in which he maintained that things are nothing to us but as they are known by us, neither their accidents nor their substances having any more being out of our minds than shadows in the water, or behind a glass do really exist where they appear. Berkeley, the spiritualistic idealist, advancing beyond Locke, then demolished, with vigo-

ous argument, the material substances which he had simply ridiculed, claimed as purely ideal the material qualities, some of which he had already conceded to the percipient mind, exploded the very notion of matter as a mere fiction of philosophers, and thus left nothing existing but minds and their ideas, or spiritual substances and their perceived phenomena, upheld by the divine mind or spiritual divine substance. At length Hume, the sceptical idealist, as if to bring phenomenalism to a crisis, advancing beyond Berkeley, with subtle logic assailed the remaining spiritual substances, which he had left exposed; exploded the essential notion of mind as no less fictitious than that of matter, of God as no less fictitious than that of the soul; left nothing existing but unsupported phenomena or associated ideas, both causeless and aimless, and thus unsettled the entire fabric of human knowledge.

But the final phase has been an egoistic idealism, which would restrict our knowledge to sheer self-consciousness. Kant, the transcendental idealist, spurning common sense as the scandal of philosophy, in his "Critique of the Pure Reason," had not only distinguished between phenomena and noumena, or between things as they appear to us and things as they are in themselves, but had referred their forms and qualities to the concipient mind alone, denying external reality even to space, time and causality, as well as the ideas of God, the soul and the world. Fichte, the subjective idealist, as an advanced disciple of Kant, in his "Doctrine of Science," then discarded from scientific knowledge the unknown noumena or things-in-themselves as no more proven than the ideas of pure reason; distinguished consciousness into subject and object, and developed the entire objective world of the mind out of its own subjective forms and categories as a product of spontaneous intelligence. Schelling, the objective idealist, as an advanced disciple of Fichte, with his essays on "The Ego as the Principle of Philosophy," and his "Soul of the World," proceeded to unite the objective and subjective factors of consciousness in an absolute ego or original mind, like our own, intuitively discerned as unconscious in nature, conscious in man, and self-conscious in art, the realized ideal of nature. Hegel, the absolute idealist, as a consistent disciple of Fichte

and Schelling, in his "Science of Logic," then maintained the absolute mind to be supremely rational, even dialectical in its evolution, and logically traced that evolution from the notion of nothingness into the categories of being, through the stadia of nature and the stages of spirit, up to the abstract thought of man, the flower and image of reason. At length Shopenhauer, the theoretical idealist, discarding Fichte, Schelling and Hegel, and starting afresh from Kant, as if to push the egoistic idealism to the verge of lunacy, in his treatise on "The World as Will and Notion," maintained the conscious will or developed force of the man to be the true noumenon or real cause of the whole phenomenal ego, and represented the entire world of that ego, with its conceived earth, sun and stars, as a mere product of the brain, and doomed to perish with it when the will that uses it shall relapse to blind primordial force and nothingness, as the bubble reflects the heavens only to melt back into the sea. And thus, at the idealistic extreme, our knowledge would appear little better than the dream of a dream.

According to the realists, however, our knowledge embraces pure realities. And this opinion was almost as ancient and extensive as the other. The whole occidental mind, for centuries, had been becoming realistic. The Hebrew, in his religious realism, had worshipped Jehovah as the living God who made heaven and earth. The Roman, in his political realism, believed himself to have conquered all ideas, nay, the very gods themselves, with his invincible legions. The Latin fathers, such as Tertullian, in their crude realism, unable to conceive anything real which was not material, had attributed a refined corporeity to spirits, to the Deity himself, and even sought the divine image in the human body. The schoolmen, forbidden even to think of a mere ideal eucharist, had cowered before the mystery of transubstantiation as the real body and blood of their Lord. The reformers, in their revolutionary realism, emancipating the human mind in all directions, had hurried from the cloister to the world, to life and to action. And by degrees, with the growth of empirical research, followed more scientific forms of the same tendency.

The first was a materialistic realism, which would extend

our knowledge beyond ideas to material objects. Bacon, the father of modern realism, led the way, with his love of the physical sciences, ever appealing from ideas to facts, things and particulars. Hobbes, the materialistic realist, as a disciple of Bacon, entering the mental sciences, grossly conceived of minds as mere bodies, impressing each other with ideas which were but material images, reflected like pictures in a mirror, or decaying sensations, remembered like the echoes of a harp Condillac, Helvetius and Diderot, successively following Locke away from Descartes as realists, transformed ideas into sensations, faculties into nerves, mind into brain, until they had merged all ideas in objects, and left nothing existing but material organisms and their material products, machine men and their manufactured sensations.

The next form was a phenomenal realism, which would include phenomena as real qualities. Andrew Baxter, the first antagonist of Berkeley and the first of the Scottish realists, in his "Inquiry into the Nature of the Human Soul," maintained it to be a plain truth, not questionable, without violence to reason, that we perceive, besides our own sensations and ideas, their external objects and causes, which we call matter, as we know a picture to be a material reality, and not a mere mental image or reflected likeness. Reid, the so-called natural realist, having become entangled in Hume's scepticism, determined to cut the knot which he could not loose, with a Scotch cleaver, entitled "An Inquiry into the Human Mind on the Principles of Common Sense," in which he appealed from philosophers to plain men, discarded the intervening ideas of the former and accepted the direct perceptions of the latter, as ever suggesting the real existence of external objects, with their qualities, both primary and secondary, and as affording the only trustworthy foundations of human knowledge. Stewart, also styled a natural realist by Hamilton, in his elegant "Philosophical Essays," recast and embellished the crude realism of Reid by enunciating the axioms of common sense as fundamental laws of human belief, and distinguishing among the primary qualities of matter what he termed its mathematical affections, involving real externality, space and time. Hamilton, who might be styled a critical realist, so far as he

was a disciple of Reid, vindicated the philosophy of common sense with exhaustive erudition and acuteness as a catholic realism of the schools no less than the vulgar belief of mankind; discriminated and defended it at all points from the bewildering phases of idealism, and expanded it so as to include among the objective realities, immediately perceived, certain primary and secundo-primary material qualities, such as gravitation, cohesion, mobility, situation, figure, extension, together with their implied substratum. Dr. McCosh, the intuitive realist, advancing beyond Reid and Hamilton, in his "Intuitions of the Mind," besides analyzing and testing anew the primitive cognitions, beliefs and judgments, may be said to have carried phenomenal realism to its limit by maintaining that we cannot know qualities without knowing substances, that we intuitively know both spiritual and material substances as having being, power and permanence, together with their other respective qualities; and, in fact, that the very distinction between qualities and substances, phenomena and noumena, things as they appear and things in themselves, is purely fictitious and misleading. And these opinions were also variously held and applied by Buffier, Collard, Prevost.

The final form has been a substantial realism which would include substances or noumena as realities. Kant, with all his idealism, had retained several realistic elements, such as his final resort to common sense, under the name of practical reason, for the objective reality of God, the soul and the world; his assumption that noumena, or things-in-themselves, have the function of affecting our senses, and his admission that the material of our knowledge comes from without into the mind, to be worked up through its forms and categories. Herbart, the father of German realism, who might be styled an essential realist, wholly discarding the idealistic side of Kant, as a critic of Fichte and Schelling, in his "Introduction to Philosophy," maintained that our knowledge is derived from experience; that the forms and categories are given us by things and not imposed by us upon them; that realities are therefore as manifold as our perceptions; that they cluster as simple essences, each with its own quality, around the soul, which, as a punctual essence, by its peculiar quality, ever as-

serts and preserves itself among them according to the relative intensity of their impressions; that ideas thus emerge in consciousness, in a more or less contradictory state; and that it is the task of philosophy to elaborate logically and mathematically the conceptions which are thus formed of surrounding realities. Beneke, who might be styled a dynamic realist, departing from Kant with Shopenhauer beyond Herbart, in his Theory of Knowledge and his Groundwork of Metaphysics, held that true knowledge, both as to matter and form, originates wholly in experience; that it embraces noumena, or things in themselves; that through self-consciousness or internal perception we can thus directly know the noumenon or real nature of the soul; that we know it to be not a mere punctual essence, nor yet a mere blind will, but an intelligent activity or system of psychical activities; that we may also know other noumena or external realities under the phenomenal world around us so far, but only so far, as they are psychically analogous to ourselves; and that, consequently, our real knowledge must decrease as we descend from human souls, through the scale of animal instincts and vital powers, to the mere unintelligent forces of inorganic nature. Hermann Lotze, who might be styled a spiritualistic realist, uniting Herbart and Beneke upon the basis of Leibnitz, has suggested, among other brilliant conjectures in his Metaphysic and "Microcosmos," that knowledge is itself a real process, as may be seen in the development of perceived colors out of etherial vibrations; that all phenomena thus spring from the interaction and passion of percipient noumena, living atoms or monads; that even the lowest monads, the material elements, have feeling, and that the scale of animated nature embraces infinite myriads of conscious beings in a teleological series, terminating and subsisting in God, the only absolute Person. Coleridge seems prophetically to have sung of such a Being, as

> "That one, all conscious Spirit, which informs
> With absolute ubiquity of thought
> All His involved monads, that yet seem
> With various province and apt agency
> Each to pursue his own self-centering end:
> Some nurse the infant diamond in the mine;

> Some roll the genial juices through the oak;
> Some drive the mutinous clouds to clash in air,
> And, rushing on the storm with whirlwind speed,
> Yoke the red lightning to their volleying car."

Dr. Gustav Fechner, the distinguished physicist and critic of Hegel and Herbart, though an idealist of the idealists on one side of his system, would seem to have become on the other side a realist of the realists, beyond Herbart, Beneke or Lotze, by arguing in his "Atomology" and "Psycho-physics," that phenomena are only produced and upheld by souls in their mutual self-manifestation; that souls thus manifest themselves through phenomenal bodies, composed of spaceless atoms; and that such souls subsist throughout organic nature, not only in plants, animals and men, but with magnified proportions in the celestial bodies, and even the universe itself, which is but the manifested soul of God. And thus, at the realistic extreme, our knowledge would claim to include nothing less than the very essence of things.

It should be observed, however, in passing, that absurd and irreconcilable as these two extremes may appear, they nevertheless contain valuable truths, susceptible of being eliminated and combined, as indeed has been already attempted, in the realistic idealism of Zeller, Ulrici and Trendelenberg.

As to the second problem of philosophy, the method or process of knowledge, there arose also two rival schools, the transcendentalists and the empiricists. According to the former, all science proceeds deductively, from principles to facts, from reason to experience. And the tendency was of ancient and extensive growth. The whole Eastern mind, for ages, had been intensely transcendental. The Hindoo had plunged into the Ganges and under the car of Juggernaut, in search of that nirwana, or original abstract being, out of which all finite existence had at first merged only as a guilty abortion. The Greek, as he wandered amid his faultless temples, had mused upon those more divine archetypes, which were so imperfectly copied in things. The fathers, in cloister and council, had speculated upon the transcendental mysteries of a pre-existent Logos and a Trinity before the world was. The schoolmen, with their brilliant logomachies, had fought, like

Milton's embattled angels, over ante-mundane problems and pre-existent universals. Even the reformers, for all their experimental religion, had ever reverted to the most transcental predestinarianism concerning the divine decrees. And with the rise of speculation came more scientific phases of the same spirit.

The first phase of transcendentalism was theological, deducing everything from the Divine attributes. Descartes, reasoning from the conception to the existence of God as the most perfect being, all-mighty, all-wise and all-good, and assuming an original plenum of vortices, including material and spiritual substances, proceeded from these premises to demonstrate how the existing world might have been created. Spinoza, reasoning from the Cartesian definition of substance as independent existence to the being of God, as the one only substance with the two attributes of thought and extension, mind and matter, thence proceeded with an array of axioms and propositions, after the manner of Euclid, to demonstrate how the existing world must have been created. Leibnitz, converting the infinite and finite substances of Spinoza and Descartes into analogous graduated beings or monads, conscious and unconscious, material and spiritual, and assuming their pre-established harmony, then essayed, with his axiom of a sufficient reason for everything good or evil, to demonstrate the existing world as the very best that could have been created. And by similar reasoning a succession of theodicies, or divine systems of the universe, were unfolded with endless variations from the days of Wolf until the time of Kant.

The next was a psychological transcendentalism, deducing everything from self-consciousness. Kant, as we have seen, had left many problems in his transcendental logic, which his successors were eager to solve. Fichte began the task with his subjective egoism; and, assuming both the content and form of knowledge to be produced by or created through the mind itself, he exhibited, in opposition to vulgar impressions, the whole existing world as a mere projection of the ego or reflection of the philosophic consciousness. Schelling soon followed Fichte with his objective egoism; and postulating one original intelligence as objective in nature and sub-

jective in man, he essayed in advance of inductive research, according to the laws of our own consciousness, to reconstruct the whole existing world as a product of the infinite consciousness. Hegel then advanced between Fichte and Schelling with his universal dialectic; and maintaining that the absolute mind must have proceeded rationally, even dialectically, in producing all things out of nothing, he essayed by mere formal logic, according to the laws of thought, to re-think the whole existing world as a process of pure reason. And from each of these schools a swarm of such speculative cosmogonies, or logical systems of the universe, has been issuing until the present hour.

But the latest phase of transcendentalism has been ontological, deducing everything from the Absolute itself. Fichte, Schelling and Hegel, through all their rigorous logic, retained an unknown quantity, a sort of potential source of all actual being, termed by the first the absolute self, by the second the absolute mind, and by the third the absolute idea or thought; and this unknown quantity had yet to be eliminated or resolved. Hegel, indeed, of the three had assumed the least, by apparently starting from the notion of nothing, excluding the personal element from the absolute reason, at least in its objective expression, and retaining only a sort of unconscious logic or ceaseless thinking according to the laws of thought. Shopenhauer, then seizing the problem anew, declared the will to be the only known cause and support of that phenomenal ego, out of which his predecessors had evolved all knowledge, and tracing the will downward through nature to mere original blind force, he pronounced the whole existing intelligible world, when thus unmasked, to be a sheer illusion, like a dream in the night. Hartmann, endeavoring to reconcile the panlogism of Hegel with the panthelematism of Shopenhauer, (or so-called doctrine of universal will,) has postulated thought with will, reason with force, as co-ordinate factors of all phenomena throughout irrational nature, and accordingly projected the whole existing world, in its present historical stage, as but a transitional fiction, like a dream before the dawn. Julius Bahnsen, however, insisting against Hartmann that the systems of Hegel and Shopenhauer together form a sort of

universal paralogism, has recently argued in his "Philosophy of History" that nature originated in contradictions, and proceeds, through logical and actual conflicts, into sheer aimlessness; and has consistently not hesitated to proclaim the whole existing world, as it issues in consciousness, one abortive paradox and very nightmare of reason. And thus, at the transcendental extreme, all knowledge would seem logically reduced to absurdity.

According to the empiricists, however, all science proceeds a posteriori, inductively, from facts to principles. And this tendency, though of later origin than the other, had been rapidly increasing. The whole Western mind had been becoming thoroughly empirical. The Hebrew, since the days of Enoch, had turned from the worship of idols to actual converse with Jehovah through all His works and word and ways. The Roman, yoking philosophy to the chariot of Cæsar, had celebrated an empire of facts over that of ideas. The Latin fathers, led by Augustine, had exchanged a speculative, pre-mundane theology for polemical definitions of the Church, of inherited sin and of human conduct. Even some of the schoolmen, such as Albert, Raymond Lully and Roger Bacon, had digressed from speculative divinity into the natural sciences and striven for their emancipation. The practical reformers of philosophy, such as Copernicus, Galileo and Kepler, had already proceeded, in their physical investigations and discoveries, upon empirical methods which had yet to be defined. And at the same time, with advancing science, came the more philosophical forms of the tendency.

The first was phænomenological, referring everything to mere phænomena. Leonardo, Telesius and Campanella, as pioneers of empiricism, successively announced, that theory is the General and experiments are the soldiers; that the construction of the world is not to be investigated by reasoning, but apprehended by the senses and collected from things themselves; and that the accumulated systems of philosophers must now be compared with the world itself as mere copies with the original epistle of God. Francis Bacon, the greatest of modern empiricists, deprecated, at the outset of his great Instauration, that we should ever offer the dreams of fancy for

a model of the world; prescribed, in his "New Logic," the rules for observing, arranging and generalizing facts; and ever made it his capital precept, that the mind be not taken off from things, but limited thereby, lest working upon itself, like the spider, it produce mere cobwebs of learning, admirable for their fineness, but of no use and profit. Gassendi, in a Treatise on Logic, anticipated the French reactionary empiricism by defending Bacon against Descartes, as a philosopher who sought aid from things to perfect the cogitation of the intellect, instead of leaving it to its own ideas and powers. And through such methods, more or less consciously pursued, the physical sciences began rapidly to be unfolded by hosts of investigators, from Bacon to Newton.

The next form of empiricism was ætiological, referring everything to causes. Bacon, bequeathing to posterity the magnificent project which he could not finish, had left the efficient causes of things still enwrapt in mediæval obscurity, and relegated their final causes or special ends to natural theology as barren of scientific results, like vestal virgins consecrated to God. Newton was the first to distinguish clearly the causes of phenomena from their forms or laws, and in his "Principia," declared it to be the business of philosophy to deduce causes from effects till we come to the First Cause, which is certainly not mechanical. Robert Boyle, as an antagonist of Descartes, maintained, in his "Inquiry into the Final Causes of Natural Things," that it is not presumptuous or idle to inquire after such causes, if it be done cautiously and with due regard to their efficients; that even inanimate bodies may act for ends as designed by the First Cause; and that ends in nature may be studied in four classes; the universal, or such as display the power, wisdom and goodness of the Creator; the cosmical, or such as maintain the order and beauty of the world; the animal, or such as mould and preserve the body; and the human, or such as consciously exist in man alone. Reimarus, in his "Logic" and "Instincts of Animals," defending the Leibnitzian principle of sufficient reason against Maupertuis, maintained that final causes have as solid a foundation in nature as in reason, that they conduct to important discoveries in the physical sci-

ences, and that philosophy requires them in order to construct the scale of natural history upon the basis of natural theology. Cuvier, as he himself declared, by the principle of final cause or design, was enabled to enrich natural history with all the splendid results which have made him so illustrious, not only erecting the whole living world in teleological series, each individual, species and class with its own end and relation, but even recalling the extinct creations of former ages in one vast plan of nature. Whewell, in his "Philosophy of the Inductive Sciences," vindicated the proper place of causes in physical researches, distinguished laws as but the means between efficient and final causes, defined the mechanical, chemical and vital causes of corresponding phenomena, and sketched the palætiological sciences, as he termed them, which connect a great First or Final Cause with the origin and development of the whole existing world, of the heavens, of the earth, and of man, with all his peculiar interests. And by such processes, though seldom admitted and sometimes disavowed, immense cosmologies, geologies and systems of natural history have been succeeding one another until the present moment.

But the final form of empiricism has been nomological, referring everything to mere laws. Newton, Cuvier and Whewell, through all their experimental researches, ever retained certain transcendental elements, the axioms or intuitions of power, cause and purpose, which other physicists were anxious to extirpate from the body of knowledge. Maupertuis had already, in his "Essay on Cosmology," banished final causes from the moral and speculative sciences as mere mental entities and bagatelles, presumptuously attributing to God our frivolous human intentions. D'Alembert had secluded them from the mathematical and physical sciences, with the ingenious metaphor of Bacon, as the vestals in the temple of knowledge. Buffon, though he plainly employed them in his Natural History, had discarded them as useless and even noxious fictions in scientific researches. Geoffrey St. Hilaire, in opposition to Cuvier, had declared that he knew nothing of animals which play a part in nature. Auguste Comte, as if to formulate these views, in his Positive Philoso-

phy restricted exact knowledge to the laws of phenomena, and stigmatized all causes, the first, the efficient and the final, as mere theology and metaphysics, the rude guesses of an infantile curiosity, which science, by the very law of its growth, is leaving behind it among ancient myths and mediæval notions. John Stuart Mill, in his "System of Logic," not only adopted the positive principle of Comte, but completed the empiricism of Hume, Stewart and Brown, by resolving all efficient causation into mere experienced sequence, and even maintained, in opposition to Whewell, that axioms themselves are but generalized experiences, so that two and two may not be found equal to four among the inhabitants of the dog-star. Herbert Spencer, apparently determined to root out the last shred of transcendentalism from his "First Principles of Philosophy," after undermining and exploding, by the Hamiltonian logic, the very conception of an absolute First Cause of the existing universe, has left the superstructure reposing upon an ultimate truth or final generalization, which he terms the persistence of force rather than the conservation of force, because the latter phrase would imply a Conserver and an act of conserving; in other words, has made it the grand fundamental axiom, that the world continues because it continues. And thus, at the empirical extreme, our most certain knowledge would seem resolved to sheer uncertainty.

These wild extremes, however, may yet appear but disparted truths, which might lose their respective error if logically recombined, as indeed has already been foreshadowed in the transcendental empiricism of Whewell, Ueberweg and Stanley Jevons.

As to the third remaining problem of philosophy, the destiny or goal of knowledge, there have arisen the two rival schools of absolutists and positivists. According to the former, science ever tends to absolute knowledge. And it is a yearning which, in different forms, with more or less distinctness, has been gathering strength for ages. The entire philosophy of the Orient claimed a sort of universal intuition. The Brahmin, in his pride of caste, believed himself on the verge of nirwana, about to fathom the secret of the world. The Eleatics, Xenophanes, Parmenides and Zeno, at the dawn

of Greek thought, seized that one only being out of which successive schools unfolded the endless multiplicity of phenomena, until the sophists swarmed forth with a pretended universal knowledge. The Gnostics of the early Church and the Alexandrian fathers, behind the popular faith, wove together all human and divine wisdom as, together, affording nothing less than a consummate philosophy. The dogmatists of the middle ages, within the pale of an infallible Church, proudly walked the closed circle of the sciences and claimed their "sum of theology" as the sum of knowledge. The mystics of a later day, Eckhart, Tauler and Rusbroek, dreamed of a profound absorption in the absolute godhead, by which they became conscious of all things. The theosophists of the reformation, Paracelsus, Helmont and Bœhme, claimed to have read all the secrets of nature and Scripture under an immediate illumination. The reforming philosophers of the next period, Descartes, Spinoza and Leibnitz, who began by doubting, ended by explaining everything with geometrical logic, from the interior essence of God to the problem of creation, including the development of the actual, necessary and perfect world from among all possible worlds, and thus bequeathed to Wolf the materials which he wrought into a universal system, both rational and empirical. And in our own times have followed still more philosophical claims to such absolute science.

The first claim has been, that the absolute or infinite is at least conceivable. Kant, the unwitting father of modern absolutism, and the first to define it since the days of Parmenides, though he struck the whole Wolfian metaphysic from the list of sciences, still retained its germinal principle, the notion of the absolute or infinite, as an idea of the pure reason, generalized from the finite and contingent. Professor Calderwood, defending this notion of Kant from the attacks of Hamilton, has ably maintained, in his "Philosophy of the Infinite," that the infinite may exist in relation to the finite, and still be absolute or independent; that man does realize a conception of the infinite Being, positive in its content, though partial, indefinite and insusceptible of completion; and that this conception is an ultimate fact of consciousness, and not

the result of any logical demonstration. Professor Ferrier, advancing beyond Kant and Calderwood, has argued with wonderful subtlety and clearness, in his "Institutes of Metaphysics," that there can be no being without knowing, no object without a subject, no existence out of relation to intelligence; that although, strictly speaking, we are ignorant of other absolute existences than ourselves, yet they are at least conceivable, as analogous beings or minds in synthesis with things; that the only necessary absolute existence, called God, is conceivable as an infinite mind in synthesis with the universe, and that this conception not only may, but must be formed by every thinking mind, a world without a God being a clear absurdity. And it will be admitted as a matter of fact, that since the time of Kant the conception itself, whether negative or positive, partial or perfect, absurd or logical, has been almost unquestionably accepted by hosts of profound philosophers as the germ of numerous systems of absolute knowledge.

The next claim advanced, therefore, has been that the absolute or infinite is cognizable as well as conceivable. Fichte, having been charged with atheism for his view of God as a mere regulative idea of the mind, wrote a "New Exposition of the Science of Knowledge," in which he conceived the absolute as the infinite Ego, embracing all finite egos, yet expressed in them, and, therefore, knowable by the analogy between the human and divine consciousness. Schelling, however, having conceived the absolute as a transcendental ego beyond our consciousness, beyond both man and nature, the one original soul of the world, could only cognize it by becoming one with it, by lapsing from consciousness into it, by losing and finding himself in it, through a mystical act, which he termed intellectual intuition, and claimed as the sole prerogative of philosophic genius. Krause, a pupil of Schelling, who endeavored to convert his pantheism into panentheism, or the doctrine of the immanence of the world in God, held still more emphatically that the intuitive cognition of the infinite, or, as he termed it, the vision of the one all-inclusive primal being, must be made the beginning and end of philosophy, as the science of the absolute. And whatever may be

thought of such peculiar cognition, whether it be fictitious or genuine, obscure or clear, it has certainly been assumed as the basis of the most stupendous speculations of modern times.

For the final claim has been that the absolute or the intelligible universe is comprehensible as well as conceivable and cognizable. Hegel, having defined the absolute as pure reason or essential thought, maintained against Schelling that it is not to be reached by one swift intuition, as if shot out of a pistol, but discursively, through the dialectical process; and accordingly, by sheer logic, by unfolding one notion out of another, from the poorest up to the richest, he boldly claimed to reconstruct all things from nothing, to re-think the whole thought of the Creator, to comprehend the beginning, cause and end of creation; in a word, to logically solve the problem of the universe. Cousin, the enthusiastic interpreter of Hegel, in his "History of Philosophy," still more distinctly pronounced this creative logic, this development of the universe according to the laws of thought, this reasoning out the world problem by the world-mind, to be necessary rather than voluntary in the Creator, and therefore, when reflected in human consciousness, as intelligible and comprehensible as any other logical process. Shopenhauer, however, insisting against Hegel what Cousin admitted, that such panlogism involves theism, declared that he alone, of all philosophers, had eliminated the remaining unknown element and rendered the universe perfectly comprehensible, as a macanthropos or phenomenal manifestation of human will and thought. Hartmann, more recently, as the conciliator of Hegel and Shopenhauer, has argued that the triumph of thought over force, reason over will, in the development of the world or the full comprehension of the absolute, must be gradual rather than immediate, and is not to be attained, logically, in the individual, but historically, in the race, through the empirical progress of knowledge. And thus, according to the extreme absolutist, our science must, sooner or later, end in omniscience.

According to the positivists, however, all science still tends to mere positive or finite knowledge. And this apprehension, in certain classes of minds, has been gaining ground for centuries. The peculiar philosophy of the West has ever con-

fessed a sort of conscious ignorance. The Hebrew, in the time of Job, quailed before the same enigmas which the Egyptian, in despairing agony, had expressed in the sphynx, the obelisk and the tomb. The Greek had his temple of Isis, inscribed to that absolute Being whose veil has never been withdrawn by mortals; and recoiling at length with Socrates, from the shallow pretence of the sophists, despaired of all knowledge as but the learning of our own ignorance, and of religion itself as a mere altar to the Unknown God. The Roman, amid these decaying philosophies, with their still unsolved riddles, when confronted with Truth itself, could only sneer, What is truth? The Latin fathers, Tertullian, Lactantius, Augustine, claimed it to be a function of revelation to expose all heathen philosophy as false science, and substitute a divine wisdom, adapted to our limited faculties and interests. The more sober schoolmen, Anselm, Albert, Aquinas, amid all their daring speculations upon abstract godhead, had glimpses of its essential incomprehensibility and of the narrow scope of their dogmatic knowledge. The critical schoolmen, Duns Scotus, Occam and Raimond, by analyzing all and discarding some of the traditional demonstrations of the Divine Being, anticipated Kant in shaking the very foundations of every metaphysical theory of the universe. The religious reformers, Luther, Melancthon, Calvin, against the claims of an infallible Church, urged a definite revelation of secret things which belong unto God, as unrevealed and unrevealable mysteries. The philosophical sceptics, Montaigne, Charron and La Motte, despaired of any complete knowledge, either from reason or revelation. And in later times came still more philosophical admissions of a mere finite science.

It was first granted, that the infinite is incomprehensible. Bacon, in his "Advancement of Learning," erected physics and metaphysics as ascending stages of a pyramid, whose vortex is lost in divinity, beyond the reach of those daring spirits who would build the sciences, as the giants piled Pelion upon Ossa, with the vain hope of invading heaven. Hobbes excluded from his "Elements of Philosophy" the whole region of theology as incomprehensible, together with all knowledge derived from revelation, and limited science to mere bodies,

physical and political. Locke, with still more emphasis, disclaimed any affectation of universal knowledge, and at the very outset of his Essay turned away from that vast ocean of being which had been so idly claimed as the natural and unbounded possession of our understanding, wherein was nothing exempt from its decisions or that escaped its comprehension. And this restriction of science to the finite, whether unintentional or avowed, theistic or atheistic, became practically the principle upon which the great body of English philosophers proceeded.

The next similar admission, however, was that the infinite is not merely incomprehensible but incognizable. Even Descartes, Malebranche and Maupertuis, though devout theists, by pronouncing the search for final causes misleading, idle and presumptuous, simply secluded their theology as a recondite province of revelation, wholly unknown to science, or retained it in the form of metaphysics. D'Alembert, Robinet and D'Holbach, however, by ignoring or rejecting that First Cause, of which all final causes are but expressions, by referring the universe to an unknown God or incognizable principle, at length excluded both metaphysics and theology from the physical sciences as wholly useless and superstitious, and consistently constructed their famous Encyclopædia upon a finite basis as a mere system of Nature. Auguste Comte, the latest reformer of the same school, merely enunciated its chief doctrine, in the form of an historic law or generalization, by maintaining that as the sciences successively become perfect, they outgrow all theology and metaphysics as mere infantile conjecture and exploded hypothesis. George H. Lewes, the chief English interpreter of Comte, in his "History of Philosophy," has but attempted to trace, through ancient and modern times, the supposed emancipation of science from theology and metaphysics, and its gradual transformation into a positive philosophy, which shall forever ignore the absolute as unknowable. And this contraction of science within the finite, whether desired or deprecated, from the most opposite motives, has at length been accepted as a logical as well as historical principle of scientific development.

As if to bring the positivist tendency to a climax, the final

admission has been, that the infinite is not only incognizable but utterly inconceivable. Hamilton, in his "Philosophy of the Conditioned," defining the infinite as the unfinished and the absolute as the finished, and claiming both as phases of the unconditioned, has then labored to prove that our conception of them is a mere bundle of negations and contradictions; that consequently a science of the conditioned alone is possible; and that the German philosophies of the absolute, since the time of Kant, have been a series of mere impotent speculations. Mansel, in his "Limits of Religious Thought," as a disciple of Hamilton, has argued that we are constitutionally compelled to believe in an absolute Being, whom we can neither know nor conceive; that the revelation of such a Being can only be an accommodation of infinite truth to our finite faculties, and that all rational theology, proceeding upon the conception of an absolute First Cause, must ever destroy itself with endless self-contradictions. Herbert Spencer, in his "First Principles of Philosophy," has at length turned the destructive criticism of Hamilton and Mansel against both metaphysics and theology, declaring it to be at once the height of impiety and absurdity to represent the absolute reality manifested in the universe, the great First Cause, as other than essentially unknowable and even utterly inconceivable. And thus, according to the extreme positivist, our science at last must end in sheer nescience.

It remains to be seen whether, between the extremes of absolutism and positivism, may not be found an ultimate or final philosophy, in which reason shall progressively concur with revelation, and science ever expand toward Omniscience.

The third and final stage of departure, which certain thinkers have reached in our day, is that of repudiating both the idea and the fact of a revelation as no longer of any philosophical value. It was not strange that the earlier philosophers at the reformation should have carefully distinguished the provinces of reason and revelation as at least theoretically separate; that Bacon should have insisted upon giving to faith the things that are faith's, or that Descartes should have deferred to revealed verities as a distinct order of truths. Nor has it been strange that some later philosophers, from mo-

tives of convenience and reverence, should exclude the sacred phrases of religion from the jargon of science; that Cuvier, as he scaled the summits of natural history, should have ascribed to a personification, styled Nature, those sublime intentions which he adored in the all-wise Creator; or that Hegel, as he sounded the depths of metaphysics, should have attributed to an abstraction, termed the Absolute, those rational perfections which he worshipped in the self-existent Jehovah. But it has been reserved for another and very different race of philosophers, in our time, to put such mere personifications and abstractions in place of the revealed realities, to claim the problems of revelation as soluble by reason, and to supersede the infinite knowledge of God with the finite knowledge of man. And they may be found in all schools, among all parties. Some of the German absolutists have virtually usurped the function of a revelation by including in their systems the unrevealed, if not unrevealable mysteries of essential, premundane theology, as well as the whole superstructure of the physical and psychical sciences. On the other hand, the French and English positivists, such as Comte and Spencer, by ignoring all revelation, have excluded from their systems the whole revealed theology together with the metaphysical and some of the psychical sciences. And the same unphilosophical spirit has appeared practically in certain speculative scientists who have endeavored to define the nature and limits of empirical research. Mr. Parke Godwin, in an eloquent addresss on True and False Science, has exposed their irrational and irreligious attempts by mere induction to settle problems which can only be solved by revelation, such as the origin and end of the world, and the whole course of the universe. Professor Youmans has replied to these strictures, that science by its own expansion, is bringing such problems within its scope; that it can know no limits but those which nature itself imposes; and that it must pursue its course independently of any religious considerations. Professors Huxley and Tyndall are solicitous that metaphysicians and theologians should let physical science alone, while they are themselves invading the whole region of natural theology and metaphysics with the freest speculations upon force, mind, causality and design. Hæckel dismisses all religious faith

from the same region as mere superstition. And the great German physicist Rudolf Virchow renounces the attempt to supplement exact science with revelation as a mere supersensuous transcendentalism or aberration of mind.

On the revealed side of philosophy, however, may be traced a like gradual severance of revelation from reason, as the source of human knowledge. In the first stage came the healthy reaction against a false Protestantism, the rationalism which was turning free thought into license. It was the time when the champions of Christian Evidence were entering the lists of philosophy to meet their opponents on the open field of right reason and free discussion. Cudworth, Bentley and Warburton had opened the warfare as in the cumbrous mail of an old tournament, with their rash feats of logic and learning, against the scepticism of Hobbes, the free-thinking of Collins, and the paganism of Morgan. Bishop Berkeley, the prince of Christian idealists, returning from. a rocky alcove of Rhode Island, where he had composed those elegant dialogues in his "Alciphron or Minute Philosopher," with which to confound the small wits of his time, proceeded to lay a foundation for the metaphysical evidences of revelation in the very principles of human knowledge. Bishop Butler, the greatest of Christian realists, whose architectonic genius wrought into one high argument the closely-packed results of twenty years' hard thinking upon the religious problems of his age, now projected the superstructure of the scientific evidences through the whole analogy of religion and nature. Dr. Nathaniel Lardner, the chief of Christian antiquarians, pressing the foe beyond Butler and Berkeley from the citadel to the outworks, then built, with life-long toil, patience and judgment, those impregnable bulwarks of the historical evidences, his "Credibility of the Gospel History" and his "Ancient Jewish and Heathen Testimonies." And from that time, by the efforts of great apologists, such as Neander, Ebrard, Ullmann and Luthardt, Norton, Greenleaf, Rawlinson, Alexander and McIlvaine, and not without help from the Roman Catholic Demonstrations and the rationalistic exegetes, have been formed evidential schools for definitely settling the whole doctrine of divine wisdom, as revealed by the Holy Spirit.

But meanwhile, in the next stage of indifference, and seemingly unaffected as yet by the modern speculations concerning the origin, development and destiny of human knowledge, have remained the traditional dogmas as to the inspiration, the canon and the fulfillment of the Scripture. As to the inspiration of the Scriptures, Catholics and Protestants have been agreed in maintaining the possibility, necessity and fact of a revelation, and in defining it as a supernatural communication of knowledge from God to man, through the prophets and apostles, by the aid of the Holy Ghost. The Jansenists, more strictly than the Jesuits, have claimed a verbal as well as ideal inspiration, while the later Protestant divines, through their conflicts with rationalism, have matured the tenet of plenary inspiration, embracing both the words and the ideas of the sacred writers. Moreover, the most varied opinions prevail within the limits of orthodoxy, as to the normal relations of reason and revelation, and the degree to which they may coincide and co-operate in different fields of inquiry.

As to the canon of Scripture a more serious disagreement began at the Reformation. The Roman Catholic Church, by the Council of Trent, declared the only source of divine knowledge to be contained in the Latin Vulgate version of the Scriptures, the Apocrypha and the unwritten traditions of Christ and the Apostles, as interpreted by Holy Mother Church alone, through the infallible decrees of her councils and pontiffs. The Protestant or Lutheran Church, in her Book of Concord, repudiated the traditions, ignored the Apocrypha, declared the writings of the fathers not of equal authority with the Scriptures, and appealed to the Word of God, freely interpreted, without the councils, by both clergy and laity, as the only rule according to which all dogmas and doctors ought to be estimated and judged. The Church of England, in her Articles, depreciated the traditions, the Apocrypha and the decrees of Councils, and maintained her own authority in prescribing such rites and ceremonies as are not contrary to the word of God, while otherwise allowing the right of private interpretation. And the different Reformed Churches, in both the old world and the new, besides maintaining that the Holy Scriptures contain the only rule of faith

and practice, have clearly distinguished between the scientific or systematic exposition of the contents of the original Hebrew and Greek, and that saving knowledge to be derived even from the common version, as read by the aid of the Holy Spirit.

As to the fulfillment of the Scripture, while all Christians are agreed that the canon is complete, yet the Catholics, by their doctrine that the Church is an infallible teacher, provide for continuous accretions of religious knowledge, and Protestants, with their claim to divine illumination, admit that large portions of Scripture, especially the prophetical books, remain to be fully comprehended, and that their full comprehension is to be attained in the progress of sacred learning, or, as the Millennarians hold, by new dispensations and revelations, bringing miraculous accessions of truth and wisdom.

In the final stage of perfect indifference, we may now behold the whole philosophical region, all scientific knowledge, openly repudiated as of no religious value, and without significance either for the defence and explication of the Scriptures, or for the completion of biblical knowledge. Some profound and intelligent divines there may be, who have begun to discern the essential relations of reason and revelation and aspire to adjust them; but the ideal of a true Christian Philosophy, harmonizing and organizing all knowledge, divine and human, if clearly grasped, is but treated as a vain fancy of the fathers or an exploded dream of the schoolmen. Not only do the more obscure and illiterate sects simply denounce all philosophy as false and worthless, but even the great enlightened Churches, though living in an age distinguished for the intellectual grandeur of its speculations, though surrounded by formidable systems which are wielded both for and against the Christian revelation, and though themselves maintaining creeds which traditionally involve elements of the Greek, Roman, and even Arabian philosophies, seem neither to desire nor to expect anything more perfect than their own little systems of knowledge, which neither exhaust the whole of divine revelation nor include any part of human science.

And thus philosophy, the very guide of the sciences, instead of mounting towards the fullness of divine knowledge, is but

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left by the indifferent spirit on the one side to wander in the blindness of uninspired reason, or on the other to crouch in abject pupilage at the feet of mere human authority.

The General Rupture in Civilization.

Returning at length from these heights of philosophy and science to the busy world below, in search of the practical issues of the great schism, we shall find ourselves passing between divided interests and forces, the one worldly and the other sacred, held apart with reserved antagonism, like bristling armaments in a time of siege.

On the worldly side of life we behold a civilization which, for three centuries, has been steadily departing from Christianity. Released at the Reformation from the false Christian culture of the middle ages, it has advanced with growing worldliness through every sphere of human activity. The first diverging step was the secularization of literature. Ficinus, the two Picos, the Medici, as we have seen, toward the close of the fifteenth century, had brought Grecian letters into Italy, face to face with the barbarous Latinity of the schoolmen. Reuchlin, Erasmus and Agrippa, in the beginning of the sixteenth century, had revived the humanities in Germany, amid general laughter at the pedantry of the monks. Montaigne and Molière, toward the close of the seventeenth century, infused a classic grace into the belles lettres of France, with a genial scepticism which did not yet need the scoff of Voltaire. Pope and Shaftesbury, at the rise of the eighteenth century, arrayed English letters in the artificial graces of that genteel deism, which had recoiled from what M. Taine calls the Christian renaissance of the previous Puritan age. At length, toward the close of the eighteenth century, German literature reached a like crisis in the refined paganism of Mendelssohn, Lessing and Gœthe. And now, in our own time, we scarcely needed the laments of a Wordsworth and a Tennyson, or the satires of a Dickens and a Thackeray, to show us that the Christian romanticism of Spenser and Bunyan is gone.

With this literary apostasy has followed a like secularization of art. Breaking loose from the fostering care of the

Church, it has but wandered away like the prodigal to the husks and the swine. In every department there has been the same prostitution of beauty to error and vice. In painting, the Madonna of Raphael is rivalled by the Venus of Titian. In music, the oratorio of Bach is exchanged for the opera of Verdi. For the miracle-plays and mysteries of a believing age, are substituted comedies which turn life into a farce and religion into a jest. The solemn temples, once reared for the celebration of the awful tragedy of the cross, are deserted for theatres too profane for even the heathen Graces to haunt; and there is no collection of modern art which might not yield the stale moral that the Christian muses have fled.

Not far behind this degradation of art has also proceeded a secularization of science. Issuing forth from the cloister as with new-born freedom, she has been recruiting her votaries from the world, until they rival the priests and scholars of the former age. Bacon, in his New Atlantis, had already dreamed of some blessed isle of science, adorned with a Solomon's House, to whose mysterious chambers physical observers were returning from all parts of the globe as merchants of light. Cowley, who sang in stilted verse of the great Lord Chancellor of Nature's laws, then projected, near London, his ideal College of pure research for the advancement of experimental philosophy. Condorcet, whose fragment on the New Atlantide still more gravely treated the romance of Bacon, sketched his universal republic of science, in which all nations should be joined together at some centre like that of English America, in grand explorations and discoveries for the good of the human race. And soon, in fulfillment of such dreams, came as much of them as could be made real. Among the colleges of surpliced scholars grew up the Royal Society of London; beside the Sorbonne arose the Academy of Sciences at Paris; and throughout Christendom, in the very midst of its Churches, spread that increasing fraternity of scientific associations which has at length been crowned with the Smithsonian Institution, for the increase and diffusion of knowledge among men. The crusades of the middle ages have been matched by great scientific expeditions to the frozen North, to the burning South,

to the ruins of the East and to the wilds of the West. Communicating observatories, searching the heavens on all sides of the planet, have taken the place of the old astrological tower. The mystic chamber of the alchemist has become a laboratory. Cabinets, museums and gardens have brought living nature in full view of the musty libraries of theology. And science, the once persecuted child of the Church, is boldly demanding admission to its highest seats of classical and sacred culture. Professor Youmans, in his work on the Culture demanded by Modern Life, arrays the chief scientific authorities of the age in behalf of the new education. Mr. Herbert Spencer, in his treatise on Education, makes science the beginning and end of all physical, mental, moral and religious training, and predicts that, like Cinderella, after having been the drudge, she will yet become the queen of her haughtier sisters in the realm of learning. Mr. Grote would have all religious instruction legally excluded from the academic curriculum. And great universities are already seeking to banish Christian science as a thing of the past.

At a still more practical remove has also issued the secularization of politics. Emancipated from ecclesiastical tyranny, the state in all its forms and with all its interests, has been steadily asserting its independence of religious ideas and influences, until now it stands forth as the embodiment of mere worldly power and grandeur. At the beginning of the movement the mediæval theocracy, which had held all nations subject to the Roman Pontiff, dissolved into a mass of jarring monarchies, settling at length under the Balance of Power. The succession of crusades which had melted all Europe together by one fiery impulse, was followed by the distracting wars of Catholic and Protestant states, terminating in a peace at Westphalia, which thenceforth excluded religious questions from the cabinets of statesmen. The sacred compact of king, lords and commons with pope, bishops and clergy, was exchanged for the intestine wrangle of sects for place and power, ending in a mere state-religion, as in England, or in the subjection of the Church, as in France, or in its absolute separation, as in the United States; and even where the forced union still remains, the wedge of disestablishment is already work-

ing, as in Scotland, Ireland and Italy. And whilst these external separations were proceeding, still greater secular changes have been wrought in the very theory and structure of the State itself. That divine right of government in all its forms, once so sacredly believed, has yielded to the notion of a social contract and written constitution; that supreme rule of the King of kings, once universally acknowledged, is obscured by the ever-boasted sovereignty of the people; and that Christianity, once potent throughout the state, is but a public sentiment so distant and vague that the very idea of a Christian commonwealth is treated as a utopian dream.

And now at last, in the wake of all these movements, there is even an attempted secularization of religion itself. The New Christianity of St. Simon and Fourier has been followed by the more sober Christian socialism of Maurice and Kingsley, virtually identifying the kingdom of Christ with the state and obliterating the distinction between the church and the world. And at length has appeared the so-called "Secularism" of Holyoake and Conway, who would make science the only Providence, and exhaust religion in the duty of attending to the present world, which is certain, rather than a future world which is uncertain. Scientific knowledge is to take the place of decaying faith and be propagated by zealous disciples. Professor Tyndall, as its apostle to the new world, eloquently pleads for its toiling votaries that are secluded like monks and anchorites from the luxury of the times. Professor Huxley, as its popular evangelist, spices his Lay Sermons with a genuine polemic flavor. And that forerunner and hierophant of the school, whom they still refuse to own, Auguste Comte, has already projected in the growing future a hierarchy whose priests shall be savants, a catechism which shall teach the dogmas of social physics, and a calendar of scientific martyrs and heroes among whom the Christian apostles and saints are not even to be named.

On the sacred side of life, however, we behold a Christianity which, meanwhile, has been as steadily departing from the accompanying civilization. At the outset protesting against the mere secular Christianity of the middle ages, it

has vacated, with increasing recoil, nearly every realm of worldly interest. It was not strange, in the beginning at least, that Protestantism should have made no impression upon literature. Its leaders in the sixteenth century, if we except Melancthon, were too busy with graver studies to cultivate the amenities of scholarship. Luther could not stop to choose classical epithets when cudgelling Tetzel, and, unlike the modern Faust, drove Mephistopheles out of his study with one dramatic burst from his ink-horn. Calvin, it may be conceded to Bishop Horsely, did not know how to expound the prophecies with the taste of a secular poet, yet he has passages which might perhaps be oftener quoted by fine writers, could they translate the austere grace of his Latinity. And because John Knox made Scotland ring with his "Blast against the Monstrous Regiment of Women," it is seldom told with what courteous phrase he still knelt to Queen Mary. The authors of Puritanism in the seventeenth century, after we have named Milton and Bunyan, are not among the greater lights of English letters. Bates, the silver-tongued, has been claimed as a theological classic for his Harmony of the Divine Attributes, and Baxter sometimes wrote sentences which recall the pure English of the prayer-book in which he was trained. But Owen, the great scholar of dissent, can be read for no other literary merit than the robust utterance of vigorous thought. John Howe, the author of the Living Temple, indulged in such a harsh and rugged style, that few can now relish his massive argument. And Rouse, the poet of the Westminster Assembly, has inflicted upon successive generations to this day, a version of the Psalter which should neither be said nor sung. The Covenanters had no writers that could redeem them from their literary outlawry by Scott and Burns. The Methodists, who might have learned better from the hymns of Wesley, declared war against literature as but a vanity of the world. And the Quakers actually tried to murder English itself. How could the man of letters be other than a mere worldling?

It was not more strange, perhaps, that the whole region of art should likewise have been deserted. The reformers, whilst dealing with an æsthetic ritual which expressed to them

nought but pernicious error, could not be other than iconoclasts, and through the successive phases of Puritanism, Methodism, Quakerism they passed, until they stood in rugged antithesis to all the grace and beauty of life. That architecture, which had been based upon the very form of the cross and aspired in bewildering magnificence towards the same glorious symbol in the heavens, was pronounced a mere monument of superstition, and exchanged for debased models of the heathen temple or the plainer chapel and meeting-house. The painting, sculpture and scenery, which had been designed to exhibit the Christian altar, priest and sacrifice, in storied light, amid pictured saints, apostles and martyrs, were ruthlessly defaced as mere relics of idolatry, or gradually replaced by the bare lecture-room, pulpit and scholar's gown, until even these disappeared in a meeting clothed in monotonous drab. The music and oratory which had rehearsed, as in high sacred opera, through a trained choir, the versicles, canticles and collects of all ages, were abruptly translated into the mother-tongue of the assembly, together with an incongruous mixture of exhortations, confessions and thanksgivings, or were wholly repudiated, at first for the new-made liturgy and stately sermon; then for pulpit rant and random outcries, and at length for leaden silence, broken only by the sanctimonious whine. No wonder the Muses were scared back to their native haunts.

It was scarcely less surprising that the province of science should also have been more or less abandoned. It had been the mistake of Protestantism as well as Catholicism, not to welcome betimes the new knowledge growing up beside them; and the educational policy of the Reformers and Puritans naturally fostered religion somewhat at the expense of science. The classics, mathematics and metaphysics of the scholastic system were retained mainly as a good foundation for divinity, while the natural sciences were left to run wild beyond the pale. The institutions of the old world, as transplanted to the new, were broken into a multitude of denominational colleges, designed as nurseries for the ministry, with a prudent toleration of candidates for the other learned professions. The Faculties of Law, Medicine and Philosophy, which had been joined with Theology, were relegated to their

respective votaries, and that of divinity erected into a separate seminary or training-school for the clergy, founded on some definite Church confession and placed in a somewhat polemic or apologetic attitude toward all other learning. The whole republic of science was fenced off by the guards of orthodoxy as secular or profane, the wisdom of Egypt and mere spoils for the children of Israel. What else could result among scientific men than a pagan worship of Nature?

It was but a further consequence, that the entire domain of politics has also been surrendered as essentially worldly and sinful. Breaking loose from entangling alliances with the state since the Reformation, the Church, in all its forms and with all its powers, has been gradually separating itself from political institutions and influences, until now it appears as a purely spiritual organization, aiming only at eternal interests. At the outset, the false supremacy of the Roman Papacy over European monarchies was broken by the great Protestant revolt; to this succeeded the Puritan dissent from the Anglican prelatical establishment; and at length, in the United States, has followed the complete separation of all churches and denominations from the government, and their mutual independence and equality before the law. And this result, so far from being enforced or deprecated, has been accepted and wrought into the very theory and policy of the Church itself. That claim of an absolute theocracy, once so arrogantly urged by pontiffs and prelates, has been exchanged for tame submission, voluntary disestablishment, and even organized dissent. That compulsory Christian training of the whole population, once so tenaciously held as the chief function and duty of the Church, has given place to state-schools, from which the Bible itself is to be excluded as too sectarian for a text-book. And those different forms of civil polity, once so studiously defended with Scriptural arguments, have been followed by constitutions in which there is no Christian idea or name, and which are often treated as mere worldly expedients or organized revolts, soon to be crushed under the universal monarchy of Christ. Was it strange that statesmen should study only heathen models and the very name of politician become a reproach?

And now it is only the last result of the growing rupture, that the whole secular side of religion itself has been abnegated as earthly and unholy. Though it was the boast of Protestantism that it came to restore the humane virtues as well as the godly graces and to promote the temporal with the eternal welfare of men, yet the old ascetic spirit, without the causes which once justified it, still shows itself, not merely in a needless seclusion of the church from the world, but in a harsh and false separation of theology from practical ethics, of doctrine from daily duty and of worship from common life. Those gentle qualities of honor, bravery and courtesy, and those more sterling traits of honesty, veracity and fidelity which historically grew up with the feudal and commercial systems and are normally but the flower and fruitage of the Christian faith are sometimes found disowning as well as disowned by its professed disciples. The great charities and philanthropies for the relief of the poor, the sick and the degraded, which were once devised and managed by the clerical class as their fit prerogative, have been passing into secular hands, and are often pursued in an irreligious spirit. And a sanctimonious depreciation of whatsoever things are lovely and of good report, so far from being always unconscious and thoughtless, has been fostered by the teaching as well as practice of certain sects and parties, who inculcate from perverted Scripture texts the unscriptural dogmas, that human society is too depraved to be regenerated, that social crimes and miseries are incurable, that all natural virtue and morality are illusory and worthless; in a word, that this world is to be abandoned as but the kingdom of Satan, and the coming kingdom of Christ anticipated only as a fiery judgment, or sort of grand *auto-da fe* of the whole existing civilization. Is it any marvel that reformers have been looking for another Gospel and a new Christianity?

Such are the extreme issues of the schism we have traced. Thus the indifferentists, on both sides, remain fixed in like seclusion, and in their tendency are alike distracting. So long as the two classes, the scientific and the religious, thus avoid each other, a kind of intellectual duplicity must needs be fostered and rival arbiters of truth set up for the decision of the

most momentous questions. The experiment they are making, though unconsciously, is that of holding one thing in religion and another thing in science, or of rendering science irreligious and religion unscientific, while practically it tends to an utter divorce of Christianity and civilization, with an extravagant development of each, which would only make their collision the more fearful and disastrous, whenever, in any great social crisis, they should rebound from the forced separation.

Now, as we found it with extremism, so it is with this indifferentism: the two parties proceed upon a false view of their normal relations. Though they are not antagonistic, yet neither are they indifferent. Though they need not oppose, still less need they avoid each other. However distinct may be their spheres, there is, notwithstanding, intersection and common ground. However diverse may be their methods and aims, there must be interaction and harmony. They, in fact, presuppose each other, and, unless mutually complemented, would be alike powerless and dead. Reason admits and craves revelation; revelation requires and stimulates reason. Whenever, then, any separation arises between them, this, too, is to be treated as anomalous, and in various ways may be proven too serious to be overlooked or palliated.

In the first place, it is a dismemberment of the very body of truth. Even when it involves no strife of words or of opinions, no collision between doctrines and theories, yet behind the show of peace and concord, it leaves the natural sundered from the supernatural, the discovered from the revealed, the human intelligence from the Divine intelligence. As the connection between nature and Scripture ensures the connection between science and religion, any forced severance of them simply tears truth from truth, which God hath joined together.

In the second place, this indifferentism is of an extent involving the whole mass of knowledge. Instead of remaining occasional, it has become progressive and general. We have described it as a vast schism, which had its historical origin in the Reformation, and has since grown and spread through all the sciences with a tide of increasing disruption and anarchy. The time is past when theology could be called their

nurse and mistress. One after another they have been breaking away from their ancient pupilage and running into seclusion and estrangement, until at last the very idea of a God, that only bond which can hold them together, even as it alone can give unity to the totality of phenomena upon which they proceed, has been formally ignored, and it has become the opened secret of the age that infidelity, once metaphysical, is now scientific, and science, once theological, is all but atheistic.

If we seek the traces of this great rupture, we find them conspicuous, not merely in breaches or separations, but also in actual controversies, waged at every point of contact along the entire range of secular and sacred learning. As we have seen, there is no science in which natural facts are not left detached from revealed truths, and revealed doctrines directly menaced by rational theories; while in the eminent domain of philosophy itself, we have the two opposing lines marshalled, as if for a last decisive encounter, by systems which array the embodied results of human research against divine revelation, upon the avowed principle that science, by the law of its growth, can only subsist upon the extinction of theology, and is destined at once to destroy and supersede it. Thus that body of knowledge, commonly regarded as most exact and certain, is fast detaching itself from that body of knowledge long esteemed most sacred and beneficent. And a feeling of the rupture may be said to pervade the whole community of scholars, ranging between the extreme of confident scepticism on the one side, and vague misgiving on the other, with an unsatisfactory suspension of judgment among the conservative classes between them; while among the masses, following the course of all great intellectual movements, it is already diffusing popular influences, which may survive long after it shall have received sentence at the tribunal of philosophy.

In the third place, such indifferentism is, in its issue, fraught with the direst evils. No mere war of words or strife of logic, it is already unfolding its disastrous effects in every sphere of human interest.

As the first class of such evils may be cited that very anarchy of the sciences which has been described. Only the

charlatan of the one side, or the bigot of the other, could be blind to the wild confusion and strife which now reign throughout the intellectual domain. The genuine lover of truth, for its own sake, on whichever side he may be found, instinctively recoils from this widening breach between our knowledge of the works and of the word of God, and craves all possible reconciliation, if only as an intellectual necessity and a rational ideal. That two such vast bodies of science cannot ever remain apart and at variance, but must ultimately coalesce in some logical system, is at once a yearning and a presentiment of the philosophic mind. Next in strength and nobleness to the instinct which longs to have all truth, is that which longs to have all truth consistent with itself.

As a second class of evils, and consequent upon the former, may be named that derangement of the educational system, secularization of learning and sectarianism of the professions, in which the great schism has practically expressed itself. The mere pedants of either side, sundered by professional antipathies that render them almost incapable of appreciating each other's peculiar enthusiasm, will indeed be content with routine labors and special researches, and seek no intellectual commerce beyond their own provinces; but original seekers for truth and actual contributors to the world's stock of knowledge in all the walks of learning, soon find themselves meeting together on the high ground of first principles, and in proportion as they thus realize a community of opinions and aims, will they escape hurtful collision and promote each his own beneficent mission. In seeking thus to found the catholicity of learning upon the unity of science, philosophy puts on the garb of philanthropy, and the lover of truth becomes also a lover of his kind.

As a third and still more obvious class of evils, may be mentioned that scepticism in religion, radicalism in politics, and sensualism in art, both industrial and æsthetic, which are the final results of such schismatic knowledge and culture. A few extremists may affect to regard this sore conflict between reason and authority, order and progress, material and spiritual culture as normal, necessary or incurable; but there are, this hour, in all lands and classes, enthusiastic believers

in social regeneration as at once within the vision of prophecy and the scope of history. And it is by the disappearance of the sectarianism of science alone that they may hope for the disappearance of the sectarianism of learning, religion and politics. For, since the ideas of philosophers at length become the opinions of the people, a logical compact of truth and knowledge among thinkers and scholars must, sooner or later, be followed by a practical compact of institutions and interests among the masses. In thus striving after the perfection of science, philosophy comes to the aid of humanity in its effort after the perfection of society.

It is indeed true, as has already been hinted, that each of these great evils may have some incidental and compensating good. This dissection of the sciences, in so far as it is merely artificial and logical, may be as convenient as it is unavoidable; this professional zeal and academic prejudice, by dividing the task of philosophy, may promote research and ambition; and even the social conflicts of diverse creeds, theories and systems, by carrying the battle of civilization from the region of thought into that of action, may only the more conspicuously relieve truth and virtue against error and vice. But when we have duly acknowledged such mercies of our transitional state, there still remain the duty and the testimony of further progress and higher improvement. Even while we hail such straggling gleams of light, we only see the darkness more plainly and long for the day-spring.

In this manner is it to be shown that the two interests, though they may not be in a state of deadly warfare, are, nevertheless, in a state of direful schism, for the healing of which their respective advocates should yearn and labor. When either the scientist would dream of dispensing with religion, or the religionist of dispensing with science, let both remember the vital bonds which join them in a blessed marriage, and dread any coldness between them, as alike with any conflict, fatal to the cause of truth and humanity.

CHAPTER IV.

MODERN ECLECTICISM BETWEEN SCIENCE AND RELIGION.

No more thrilling sight could be imagined than that of two great armies meeting in the shock of battle. We picture the scene as the inevitable collision approaches. The skirmish, the truce, the parley are at an end; the ranks are recalled to arms; the grand charge is ordered; the combatants rush together and disappear behind the clouds of war. In that one supreme moment there is the very sublimity of human hope and daring. But while yet we gaze and wonder, the smoke clears away and we behold simply both armies fleeing from each other in the wildest confusion, neither left master of the field.

And it is thus that certain ardent votaries of philosophy, as Sir William Hamilton phrases it, "would carry the Absolute by assault," vainly endeavoring to conquer the totality of knowledge, divine and human, by one heroic effort of the intellect. Or, as Lord Bacon has expressed it, "some modern men, guilty of much levity, by an unadvised mixture of things divine and human have essayed to build a system of natural philosophy on the first chapter of Genesis, the Book of Job, and other places of Holy Writ, seeking the living among the dead."

We have termed this class of thinkers, whether they appear on the side of religion or of science, the Eclectics, or Impatients, because they are in haste to combine their several fruits of research, the one overlooking the claims of reason,

and the other, the claims of revelation. No border question can arise between science and Scripture which they will not at once force to a settlement. Already sure of the ideal unity of truth, they would also make sure of the ultimate system of knowledge and range over each other's domain in search of materials for its construction; while in the sphere of practice, they will straightway organize upon its basis the ultimate system of society. In a word, they are the knights-errant of philosophy who sally forth to conquer all knowledge by the force of genius or logic and reform the world single-handed.

In contrast with both the Extremists and the Indifferentists, they are in no degree averse to the great reconciliation of divine and human knowledge, but are simply inapt or unfit for the task. Though impressed with the necessity and importance of the work and themselves rightly inclined towards it, yet from some defect of intellectual temperament or training, from a too ardent imagination or versatile fancy, or from an excessive love of symmetry, or from a habit of hasty generalization, or from a lack of special knowledge, they fail to bring the two interests into perfect understanding and rational agreement. We proceed to sketch them more particularly according to the method hitherto pursued.

The religionist of this eclectic spirit is in haste to appropriate into his creed the whole existing product of reason. Throughout the rational province of each science he strays, sifting theories and culling facts to be wrought into his exegesis, in support of his own theological opinions and beliefs. Indeed, he never enters the field of research but with some foregone dogma of the church or private interpretation of Scripture which he wishes to uphold with extraneous aid or illustration; and there is no physical hypothesis so crude, no metaphysical speculation so rash, that he will not compel it to do service in his apologetical or polemical tactics. Science is simply degraded by him from a handmaid of theology to a slave and put to the drudgery of propagandism.

The scientist of this eclectic spirit is in haste to appropriate into his system the whole existing product of revelation. From the revealed section of each science he draws doctrines and texts to be woven into his researches, in support of his

own scientific discoveries and speculations. In fact, he never resorts to the Bible but with some foregone theory of science or tentative hypothesis of his own, for which he seeks divine authority and confirmation; and there is no text too far-fetched, no dogma too absurd to be pressed into a proof or illustration of his physical and metaphysical opinions. Theology, queen of the sciences, is degraded by him into a mere vassal and chained to the chariot of progress.

History yields examples of this impatience, in both of its forms, wherever society has presented that spectacle of conflicting opinions and interests which, as M. Guizot says, is so revolting to a certain class of great minds that they feel an unconquerable desire to introduce order and unity. It was somewhat of this spirit, under its scientific phase, which impelled the later disciples of Plato, in the vain hope of conquering a peace among philosophers, to collect out of the ruins of the last Gentile philosophy that huge agglomerate of systems, Eastern and Western, Greek and Roman, known as the Neo-Platonism. It was somewhat of this spirit, under its religious phase, which hurried the later Greek fathers, such as Clement and Origen, into that crude amalgam of sacred and profane learning which was all that survived the wreck of the first Christian philosophy. And even among the later Latin schoolmen, after scholasticism had narrowed the peripatetic within the pale of the church, there arose now and then some towering genius, such as Roger Bacon and Albert, whose expanded vision and encyclopædic lore were but lofty expressions of the same spirit. But as it was reserved for the Reformation to introduce the great schism of divine and human knowledge, described in the last chapter, together with a consequent anarchy of sects and schools, so it was not until our own times that there could spring up any of that intellectual impatience, that heroic love of truth and order, which the strange antagonism or stranger indifference of the other parties is but fitted to excite and to aggravate. And hence we already behold in both quarters an ardent eclecticism, more or less crude and rash, which would immediately press all religion into the support of science or force all science into the service of religion.

Let it be carefully premised before we proceed to sketch some illustrations of this spirit, that in order to make them complete and serviceable, it will be proper to include in the class of religious eclectics all who do not proceed philosophically in their endeavor to harmonize scientific facts and biblical truths, and among them many who may have the true cognitive theory latent in their minds without elaborating it, and whose work, therefore, will endure and appear in the final system of knowledge. But it obviously forms no part of our present task to discriminate any such verified hypotheses as will thus survive the mere sagacious conjectures which may pass away. Of all the innumerable systems and opinions presented in our previous history of the sciences, there is probably not one which has not been wrought into conscious connection with the Bible; and while some of these constructions already form an integral part of the temple of truth, others are still regarded by their own authors as purely tentative and problematical, and still others were never offered as aught else than the mere recreations of a devout fancy.

Surveying first the physical sciences, we shall there see the ranks of the sciolists and dogmatists ever and anon broken by eager divines or devout naturalists, who for centuries have been sallying into each other's domain without making permanent conquests of truth, until the border fields of religion and science appear strown with exploded errors and fantastic speculations, like antique armor made ridiculous by modern warfare.

Eclecticism in Astronomy.

The whole scientific astronomy has thus been invaded and traversed by the eclectic spirit. From the beginning the existing system of celestial physics, whatever it might be, has been claimed as a province of natural theology for the illustration of the divine power, wisdom and goodness. During the reign of the Ptolemaic hypothesis, for nearly thirteen centuries, the scriptural firmament variously described as an expanse, a canopy, a mirror, was supposed to consist of numerous crystalline spheres one within another, attached to the sun, moon and stars, and turned round the earth by the hands of

angels, in order to produce the beneficent vicissitudes of day and night, and summer and winter. While the old astronomy was yet on the wane, Lord Bacon found the Book of Job still pregnant with its secrets; tracing allusions to the convexity of the heavens as stretched over the pendent earth; to the immutable configuration of the fixed stars, the Pleiades, Arcturus and Orion as ever gently bound to the same relative position in the revolving skies; and to the invisible constellations of the opposite hemisphere as hidden in the chambers of the south. More than twenty-five years after the demonstrations of Newton, the Dutch savant, Nieuwentyt, adhering to the transitional scheme which Tycho Brahe had devised as a compromise with theology, continued to expound the divine wisdom and goodness in enchasing the stars upon a solid sphere concentric with the earth. M. Theodore Martin, in his treatise on the Trial of Galileo, mentions the elaborate works of numerous forgotten writers of the seventeenth century, such as Morin, Rocco, Chiaramonti, Accarisio, Alexander Rosse, Dubois, Scheiner, Kirchmaier, Fabri, Herbinius, and some even in the present century, such as De Bonald, Matalène, Lachèze, and Wrangler, who have continued to advocate the repose of the earth and the motion of the heavens in the supposed interest of biblical truth. And the same geocentric error is still practically countenanced by natural theologians who represent the solar system as contrived for human advantage alone, and the innumerable heavenly worlds as having no other or higher purpose than mere chronometrical signs and luminaries to our little planet.

But with the rise of the modern astronomy came renewed efforts to extract its religious lessons. The earlier astronomers themselves, such as Copernicus, Kepler and Newton, did not scruple to mingle pious reflections with their scientific discussions. Richard Bentley, the first Boyle Lecturer, in his sermons on the "Confutation of Atheism from a Survey of the Origin and Frame of the World," expounded the Principia of Newton against the Epicurean doctrine of eternal matter and motion, at the same time unfolding scientifically that ancient proof of the divine beauty and order of the firmament, the

cosmos and mundus, which kindled the adoration of Plato and Cicero no less than of Moses and David. William Derham, the learned Canon of Windsor, whose once popular "Astro-theology" seems to have been the first distinct treatise of the kind, also demonstrated the being and attributes of God from a survey of the heavens, especially enlarging upon the usefulness of the celestial globes as then for the first time becoming apparent in their ascertained figures, motions, orbits, and attractions. The versatile Whiston, in like manner, treated of the "Astronomical Principles of Natural and Revealed Religion," on the basis of the Newtonian philosophy. And the same argument was continued by Ray and Paley. Dr. Whewell, in his Bridgewater Treatise on the "Connection of Astronomy with Natural Theology," still more scientifically vindicated the benevolent design of the cosmical arrangements against the insinuation of La Place that it was easy to conceive of a better solar system. The late Professor Ormsby Mitchell in his "Astronomy of the Bible," not only sought to illustrate the divine omnipotence, eternity, immutability, and wisdom from the celestial mechanism, but to discern an occult inspired acquaintance with it in the very language of the Scriptures. It has been claimed that the Hebrew expression in Job, "the sockets of the earth," implied a knowledge of its diurnal rotation, and that in the binding "influences of the Pleiades" there is an anticipatory allusion to the revolution of the solar and other astral systems about a centre of universal gravity which Mädler has placed in that constellation. The author of the ingenious little treatise, "The Stars and the Earth," has derived an illustration of the Divine omniscience and Book of Judgment from the velocity of inter-planetary light, by supposing an observer receding from star to star, with an increasing vision of events after their occurrence, and thus enabled to review the entire history of the earth from the present day to the time of Christ, from thence to the calling of Abraham, to the Flood, back to the new-born world, with the morning stars shouting over it for joy. And other more popular writers, such as Professor Nicol in his Architecture of the Heavens, Dr. Thomas Dick in his Celestial Scenery, and Dr. Burr in his Ecce Cœlum and Pater Mundi, have

aimed to render astronomy not only instructive and entertaining, but tributary to practical religion and piety.

It is, however, in the speculative domain of the science, in the treatment of questions concerning the origin and design of the heavenly worlds, that the religious eclectic has loved to revel. The nebular hypothesis had scarcely been formed before it was seized as the Biblical cosmogony or doctrine of creation. It is true, that such germs of the hypothesis as had appeared in the systems of Epicurus and Lucretius were not employed by the fathers or schoolmen or reformers, all of whom were naturally led to interpret Genesis from a geogonic as well as a geocentric point of view, regarding the visible heavens as a mere appurtenance or atmosphere of the earth. It is true also, that the first modern cosmogonists, Descartes, Leibnitz, and Kant, though assuming the Scripture doctrine of creation as the covert basis of their speculations, did not attempt to reconcile the former with the latter, as their only aim was to show how the worlds might or should have been created. But later cosmogonists and divines have sought more directly to combine the views of Herschel and La Place with those of the sacred writers. The author of the "Vestiges of Creation" distinctly stated his belief, that the nebular hypothesis might be reconciled with the Scriptures. Schubert, when he held that hypothesis, described the dim back-ground of the heavens as one unbroken nebulous cloud which could not resolve itself into luminous shapes and glowing spheres of sun and planet until it felt the energy of the divine command to bring forth worlds. Whewell also maintained that, for the enkindling of such a dark, inorganic mass, reason conspires with revelation in requiring the creative mandate, "Let there be light," and boldly depicted the forming planets, stars, and nebulæ as lumps which have flown from the potter's wheel of the Great Maker, sparks which darted from His awful anvil when the solar system lay incandescent thereon, and curls of vapor which rose from the vast caldron of creation. The late Professor Ormsby Mitchell, in his Biblical Astronomy, declared the correspondence between the nebular hypothesis and the Mosaic cosmogony to be as exact as any current fulfillment of prophecy. And accordingly some recent

advocates of the hypothesis have sought for distinct references to it in various parts of the Bible. Frederick de Rougemont, in his "Revelation and the Physical Sciences," having distinguished the first three pre-solar days as the astronomical part of the hexæmeron, proceeded to identify the formless void of Moses with the nebulous abyss of La Place and the upper and lower waters of the firmament with the gaseous masses which broke into fiery suns and planets, while one of them cooled and condensed as the solar system including our earth. Professor Tayler Lewis has ingeniously likened this stage of the creative process, with its waters above and waters beneath, to the spectacle which might now be presented to an observer of the aqueous rings of Saturn, if he could view them from the body of that planet. Professor Guyot, in his memoir on "Cosmogony and the Bible," suggests that the "waters above the heavens," of which the Psalmist speaks, are the primitive nebulæ variously distributed in celestial space by Herschel, Mädler, and Alexander, and describes their division, concentration, and organization into suns and planets as respectively the works of the first three creative days. Similar views are held by Dr. John Baptiste Baltzer, of the Roman Catholic Faculty of Breslau, who maintains in his profound "Biblical History of Creation" that the formless earth and lightless water of Genesis indicate the primitive matter and universal ether, out of which by so-called Neptunian and Plutonian processes were formed nebulæ, suns and planets; and that in the first, second and fourth days this cosmogony or development of the celestial cosmos proceeds in accordance with the spectroscopic discoveries of modern astronomy, while in the third, fifth and sixth days has occurred the geogony or development of our planet in accordance with the results of palæontology.

The plurality of inhabited worlds is another hypothesis which has been blended with the Biblical angelology or doctrine of angels. For thousands of years the traditional conception of other worlds had been predetermined by a geocentric system, and the Olympus and Orcus of Homer, the Elysium and Tartarus of Virgil, the Paradiso and Inferno of Dante, were alike placed above and beneath the visible

plane of the earth. Even the Heaven and Hell of Milton remained tinctured with Ptolemaic views. But with the downfall of that hypothesis came efforts to adjust the angelic hierarchy to the new Copernican system of suns, planets and satellites. In the very treatise of Galileo may be found some epistles of his friend Antonio Foscarinus, a Carmelite friar, designed to reconcile the new theory with orthodoxy by showing how the earth, as it moved in its orbit, might retain its central hells and concentric heavens as still apparently above and beneath its inhabitants. Bishop Wilkins, one of the first advocates of the Copernican system in England, and a founder of the Royal Society, published a scientific romance entitled the "Discovery of a New World," in which he cited the fathers and schoolmen to prove the Moon is paradise, and thought it not impossible that posterity might have commerce with the Lunarians by means of flying ships or chariots fashioned like a wooden eagle. Devout astronomers, such as Huygens and Newton, so far from treating the idea of inhabited worlds with the levity of Fontanelle, thought it consonant with the Scriptures, even if not explicitly revealed. In later times, the Herschels and Arago have agreed with Bode in peopling the sun with the children of light, sheltered behind his luminous corona as within the very glory of the Almighty. And orthodox divines have sought for direct correspondence between the astronomical and Biblical realms of intelligence. Dr. Tholuck could fancy the redeemed finding a congenial abode in the fair savannahs of Venus or the bright plains of Mars, while the lost were consigned to the dreary wastes of Jupiter or the dismal craters of the Moon. Dr. Thomas Dick made his "Christian Philosopher" speculate upon the magnificent scenery of Saturn with his belted skies, Jupiter with his procession of moons, and the fixed stars with their dazzling suns as seats of life and intelligence adorned by the Creator for the worshiping host of heaven. Eloquent preachers descanting upon the fancy of Bradley and Mädler have supposed the central sun may be the royal seat and court of the great Creator and Governor of worlds, around whom adoring suns and planets revolve as tributary provinces in obedient loyalty and praise. Professor Lange, uniting the speculations

of Herschel with the revelations of St. John, in his "Land of Glory," hailed the innumerable orbs beyond our solar system, as the many mansions of our Father's house, the New Jerusalem above, where they need no light of the sun nor of the moon, the very heaven of heavens and holy of holies into which Christ hath triumphantly ascended. And Dr. Kurtz, in his "Biblical Astronomy," rising to a still higher flight has claimed the fixed stars with their luminous, refined structure, as abodes of those pure angels who can know neither birth nor death and who stood nearest the throne of glory as the eldest children of the Creator when the foundations of the earth were laid, while the morning stars sang together and all the sons of God shouted for joy. Shakspeare would seem to have unconsciously expressed the same thought as suggested by the contemplation of the starry heavens:

> "There's not the meanest orb, which thou behold'st,
> But in his motion like an angel sings,
> Still quiring to the young-eyed cherubims;
> Such harmony is in immortal souls."

Such cosmical speculations have even been combined with the biblical soteriology or doctrine of salvation. The descent of Christ into Hell and His ascent into Heaven seem to be acquiring a new astronomical significance. Though at first orthodox divines such as Bellarmin and Melancthon repudiated the idea of inhabited planets as inconsistent with the moral importance of the earth, the incarnation of Christ, and the redemption of man, and regarded them as mythical and monstrous as the fathers had regarded their antipodes; yet when the idea of other celestial orbs and races had become plausible and familiar, ingenious efforts were made to connect them spiritually as well as materially with our world and embrace them somehow within the scheme of the Christian revelation, as either fallen or unfallen, and therefore to be either saved or confirmed in safety through the infinite efficacy of the Cross, by the incidental merits of a Saviour of whom the whole family in heaven and earth is named. As if to start such curious problems, Dr. Young, in his Night Thoughts, imagined himself interrogating the inhabitants of a

distant star as to how far their moral history corresponds with our own:

> "Enjoy your happy realms their golden age?
> And had your Eden an abstemious Eve?
> Or, if your mother fell, are you redeemed?
> And, if redeemed, is your Redeemer scorned?"

And to such questions various answers have been given by equally orthodox writers. Dr. Chalmers, in those magnificent prose-poems, his Astronomical Discourses, on the supposition that our earth is the only lost world, combined his great scientific and biblical knowledge to rescue it from its seeming insignificance in creation, by likening man to the solitary sheep astray from the heavenly fold, by magnifying his moral importance in comparison with the telescopic marvels above him as well as in contrast with the microscopic wonders beneath him, and by showing why the higher intelligences around him might desire to look into the mysteries of his salvation, how an intense sympathy may be felt for him in distant parts of the universe, and what a contest for ascendency over him is being waged between the principalities in heavenly places and the rulers of the darkness of this world. The anonymous author of the treatise, "The Stars and the Angels," adopting the same hypothesis, has maintained, on the ground of physical and moral analogies, that the sons of God, the host of heaven, are of the same nature with Adam and Eve in paradise, that consistently with this doctrine, carnivorous animals may exist in the stars as they existed upon our earth before the fall and mortality of man, and that so closely connected are all other intelligent races with ours that there is not an inhabitant of the most distant nebula who is not mysteriously interested in the mediation of Christ. Dr. Kurtz, combining the speculations of Chalmers and Schubert, maintained that the disorder introduced throughout the heavenly hierarchy by the primitive revolt of the angels, as well as that consequent upon the fall of man, is to be repaired through the vicarious atonement of Christ once for all worlds and for all ages, that in Him may be gathered together all things, both which are in heaven and which are upon earth; and therefore designates our solar system as the Judea of the

universe, our planet as the Bethlehem of the heavenly land, and redeemed man as the favored child of Jehovah, to whom sun, moon, and stars make obeisance as in the prophetic dream of Joseph.

Daring as such conjectures may seem, it was but a logical step farther to combine the new scientific cosmology with the biblical Christology or doctrine of incarnation. Early in the mediæval schools it had been held that the chasm between the infinite and the finite, the Creator and the creature, could only be closed, for angels as for men, through an assumption of their respective natures by the Deity, like that of the God-man in Christ; and since astronomy has made us familiar with other inhabited worlds, and geology has suggested their physical and moral analogy to our planet, it has been consistently argued that a divine incarnation may be as requisite for their redemption as for our own. Bishop Butler has hinted it as a thing not antecedently improbable, that in some other globes there might be an inverted predominance of irrational and vicious creatures over the rational and virtuous, and a probable need in some worlds for such a miracle as the Christian revelation. Orthodox Hegelian divines, such as Dorner and Christian Weisse, with their philosophical view of Christ as the Divine Logos or Universal Reason of God, could admit the idea of an incarnation of Deity upon all worlds to be alike demanded by the modern astronomy and the true Christology, even if other planetary races be simply viewed as finite, though unfallen creatures. Sir David Brewster, on the assumption that such races are fallen and salvable, in his treatise styled "More Worlds than One the Creed of the Philosopher and the Hope of the Christian," has recourse to the bold suggestion of a repeated immolation as well as incarnation of Christ, by which under different physical forms to expiate the guilt of unnumbered worlds. And revolting as such a thought may be to many minds, yet it has been poetically expressed by Philip Bailey, the author of Festus, in an imaginary colloquy between the Son of God and the Angel of the Earth:

> "Think not that I have lived and died for thine alone,
> And that no other sphere hath hailed me Christ.

My life is ever suffering for love.
In judging and redeeming worlds is spent
Mine everlasting being."

At length, to complete the picture of eclecticism in this science, we may now behold the entire Biblical history of the heavens already recast in an astronomical form. It had been the dream of the mediæval astrologers, such as D'Abano and Cardan, to link the fortunes of Christianity, past, present, and future, with the march of the stars; and even after the Reformation it was urged, in proof of planetary influence over human affairs, that in the Scriptures the stars were said to have fought in their courses against Sisera, and that the Israelites in Babylon were dismayed at the signs of heaven. But as soon as the folly of connecting the petty concerns of mortals with the revolutions of innumerable worlds had been demonstrated, it then became desirable to gather astronomical evidence of such scarcely credible miracles as the Arrest of the Sun at Ajalon and Recession of the shadow on the Dial of Ahaz, the Star of the Nativity, and the predicted conflagration of the heavens in the last day. As to the first named miracles there have long been orthodox attempts to identify them as true astronomical events rather than mere optical appearances. While the Ptolemaic system prevailed, the fathers and schoolmen taught that there had been a literal stoppage of the sun in his course for a whole day, and that the Book of Jasher is simply cited as corroborative divine authority for the miracle, and not as a poetical embellishment of some natural occurrence. It was likewise held that the sun went back through ten degrees in the reign of Hezekiah, with a receding shadow. And even after the time of Galileo and Copernicus, both Protestant and Catholic divines adhered to these views. Calvin, in his Commentaries, maintained that in answer to the command of Joshua, He who constantly rolls the immense orb of day with indefatigable swiftness was pleased that it should halt till the enemies of Israel were vanquished; and also that when Hezekiah prayed for a lengthened life, the sun was turned back with its shadow through ten degrees of the dial as a sign to the king, that He who made the day could prolong his life. Archbishop Usher, in

his "Annals of the World," argued that by the prodigious and miraculous retrogradation of the sun in the times of Joshua and Hezekiah, as much was substituted for the night as was added to the day, and in proof that the civil calendar was unharmed, referred to the eclipses recorded by Ptolemy and the Chaldeans. Bishop Patrick, commenting upon the Book of Joshua, found plain evidence in the Euterpe of Herodotus that the Egyptians had known of a stupendous alteration in the course of the sun, and even sought for mythical traditions of the event in the story of Apollo, stopping the wheels of his chariot and prolonging the day, in order to listen to a chorus of nymphs, or in the annals of the Theban war, when the sun stood still and blushed at the unnatural murder of Atreus. The learned Buddeus held the same opinion, and Cardinal Cullen has not yet relinquished it; but a number of divines now seek to modify it, by maintaining, more in consistency with the Copernican system, that it was the rolling earth which stood still and not the sun, the optical phenomena being the same in either case. Mr. Greswell, in his work on Catholic Chronology, has calculated that in the reign of Hezekiah, May 31, B. C. 710, suddenly and miraculously, the earth's axial motion was reversed from East to West, and that confirmation of the event may be found in the solar eclipse recorded in the Chinese book of the Shu-king. And some intelligent Protestant divines, while admitting the tremendous disturbance and chaos which such an arrest of our planet would produce all over the globe, if not throughout the solar system, have still insisted that these disastrous consequences might have been miraculously prevented, and that it would have been a worthy feat of Omnipotence thus to deliver the army of Joshua and confirm the faith of Hezekiah.

The Star of the Wise Men has in like manner been a fruitful theme of astronomical speculation. The fathers, such as Eusebius, Augustine, and Jerome seem to have simply regarded it as a new creation in the heavens or in the atmosphere, and dwelt upon its surpassing lustre and purity as a symbol of the star of Jacob, the bright and morning star, and the image of the Father's glory. The scholastic astrologers placed it among the constellations and even sought to cast

the horoscope of Christ. But with the decline of astrology the Reformers sought to restore it as a purely miraculous object, lying beyond the science of the Magi as well as of modern astronomers. Calvin, for example, described it as a meteor or comet which, unlike any natural star, appeared and disappeared and by a devious course pointed the way to Bethlehem. And, in recent times, some attempts have been made to identify it as a strictly astronomical miracle. Horsley, and more recently Hengstenberg, so far from regarding the luminary as a mere astrological sign, have ingeniously argued that it was the star of Jacob or the miraculous fulfillment of a prophecy of Balaam which had become traditional in the heathen world and which the Magi, in common with other devout Gentiles, were then investigating. Dean Trench, in his little treatise on the "Star of the Wise Men," also supposed them to be guided by secret illumination rather than any occult art, and conceived the prodigy itself to have been literally a new star, larger, lovelier, and brighter than any other in the host of heaven, yet probably resembling such variable stars as Kepler and Herschel have sometimes discerned as appearing and disappearing with unwonted brilliancy. Wieseler, a German writer on the Chronology of the Four Evangelists, has argued that while the luminary itself was produced by a natural conjunction of the planets, massed together as an apparent star, yet the real guiding star of the Magi was a comet which, according to some Chinese astronomical tables, was visible for about seventy days at the beginning of the Christian era. Many orthodox divines, however, with Albert Barnes, still regard this star as a meteor or aurora which appeared by divine command in the skies of Persia and Judea; while others, conceding to sidereal astronomy all that it now claims, can find nothing incredible in the creation of a new-born world in the heavens as the presage of a new-born God upon earth.

But of all the themes of biblical astronomy none has so enkindled the fancy of eclectic scientists and divines as the predicted destruction and renovation of the heavens by fire in the day of judgment. So long as the astronomical heavens embraced only the visible firmament and atmosphere, and

were thought to be composed of crystalline spheres revolving with the planets attached, it was easy to imagine such a fabric dissolving in flames, with the sun and moon as red as blood, the stars falling to the earth, the elements melting with fervent heat, the heavens passing away with a great noise, and the new heavens emerging in their place as the purified abode of saints and angels. And consistently with such views the sacred poets and artists of both Catholicism and Protestantism have depicted the coming of the Son of Man in the clouds of heaven, the saints rising to meet Him in the air, the judgment of men and angels, the triumph of the heavenly host, as the successive scenes of a celestial drama yet to open within our visible sky, at the foretold signal of the last great day,

> "When shriveling like a parched scroll
> The flaming heavens together roll,
> And louder yet, and yet more dread
> Swells the high trump which wakes the dead."

But in the progress of celestial physics came the need for some re-adjustment of these tremendous miracles. At first such prodigies as comets and meteors, in the existing imperfect state of knowledge, were supposed to be direct instruments as well as portents of the coming judgment. Whiston, with his unbridled fancy, imagined that a great comet to which he attributed the Deluge was a kind of travelling purgatory, hurrying its wretched inmates between the extremes of heat and cold, from the sun to the borders of the solar system, and predicted the exact date of its return as a visitation of the terrible judgment of God, to destroy the world by fire as before by water. Halley, in like manner, lent his graver authority to the popular fears excited by the dreadful comet of 1680, which two centuries before had spread such consternation over Europe that the Pope had issued a bull for special prayers to avert its approach. Newton also conjectured the burning stars of his day to have been ignited by comets, which might yet combine with other accumulating disturbances in the solar system to enkindle the great catastrophe foretold in Scripture. And the scene of the conflagration itself was made co-extensive with the realms of astronomy.

The English Millennarians,such as Mede and Whitby, understood the elements which shall melt with fervent heat to be the planets and constellations, and cited the fathers to prove that the heavenly bodies shall as truly be dissolved as the solid earth. Chalmers, with his glowing imagination, described the new heavens and earth emerging from a fiery chaos, and space again lighted up with a firmament of material splendor; and, so far from treating the conflagration as either local or metaphorical, he declared, in his discourse on the "Transitoriness of Visible Things," that those solid and enormous masses which, like the firm world we tread upon, roll in mighty circuits through the immensity around us, shall flee away from the face of Him that sitteth upon the throne and no place be found for them. Kurtz, connecting as he does the progress of all other worlds with the moral fortunes of our planet, has maintained that in consequence of the great angelic apostacy the heavens are not clean in the sight of Jehovah, but with all their hosts of stars shall yet be renovated and transfigured by the purifying fires of the final judgment, when Christ with the holy angels shall descend to the earth and forever separate the good from the evil elements throughout creation. Not even the remotest stellar worlds are beyond the reach of such lofty speculations. Helmholtz himself has suggested that the final relapse of planets, suns, and galaxies into igneous vapor might answer to the popular description of the day of judgment. Professor Stephen Alexander, in accordance with his theory of the disrupted and spiral clusters and nebulæ, finds in their very appearance a visible expression of that creative energy which destroys and renews the heavens as but the vesture of the Almighty, that waxes old and is changed like a garment. Doctors Tait and Balfour, in their essay on the "Unseen Universe," have maintained that the predictions of the sacred writers are verified by the modern doctrine of an ultimate dissipation of energy, by which all existing worlds are destined to collapse and vanish like smoke into the invisible ether whence they sprang. Mr. Ethan S. Chapin, in his treatise on "Gravitation in Nature," has argued, that already that force has at times been miraculously suspended, and were it entirely withdrawn, many pro-

phecies of Holy Writ would be fulfilled, the earth would burst and melt with fervent heat, the moon likewise become as blood, the sun be darkened through expansion, the stars fall like meteors, and the heavens depart as a scroll when it is rolled together. And, difficult as it would be even to conceive of such a stupendous miracle throughout celestial space and time, yet eloquent preachers would sometimes seem to imagine that a literal extinction of the sun and moon, falling of the stars from their orbits, rolling together of suns and planets in flames, and passing away of the whole sidereal heavens, with all their systems of worlds, would be a fit closing act in the divine drama of our little orb.

Eclecticism in Geology.

The scientific geology, in like manner, has been ravaged for the spoils of a religious eclecticism. Each successive phase of terrestrial physics has been at once claimed as a manifestation of the Divine wisdom and goodness, and authenticated in the very words of Scripture. For centuries, as we have seen, according to the orthodox geography, the known earth was delineated as an oblong island established upon the floods; with the city of Jerusalem at the centre and four great rivers running to the ends of the earth into the sea and returning in clouds whence they came; with a crystal roof in which angels opened and shut the windows of heaven in order to produce the vicissitudes of the weather; and with a subterraneous cavern from which at any time the purgatorial flames might burst forth in judgment. But when the true physical geography became known, devout naturalists such as Nieuwentyt, Derham, and Ray began to collect more scientific evidences of the divine wisdom in the structure and furniture of man's earthly habitation, anticipating much of Paley's argument, even to the illustration of the watch. M. Bartholmèss, in his Critical History of Religious Doctrines, has enumerated many French writers of the last century such as Reaumur, Bonnet, Trembley, Lyonnet, together with the German authors, Wolf, Fabricius, Lesser, Lambert, Rothe, Schultze, Geltke, who gathered theistic proofs and illustrations from every element and object in nature, water and fire, minerals,

shells and insects and even storms and tempests, in treatises with the pedantic titles of Hydro-theology, Pyro-theology, Litho-theology, Testaceo-theology, Insecto-theology, and Brontë-theology. And somewhat of the same conceit is still favored by natural theologians who would make the human intellect the sole final cause of the microscopic crystals in the sand and the snow, and find special divine intentions in physical effects which are plainly the result of accident or artifice.

As the geological sciences have advanced, the true theistic argument has become cumulative and bewildering in its magnificent richness. Evidences have been collected not merely of benevolent design, but of supreme intelligence in the mathematical order, the geometrical symmetry, the optical beauty, as well as the wonderful utility which pervade the whole terrestrial system. Dr. John Kidd, in his Bridgewater Treatise on "The Adaptation of External Nature to the Physical Condition of Man," with reference to the supply of his wants, starting with a view of his comparative helplessness, has ranged through the atmospheric, the mineral, the vegetable, the animal kingdoms, co-ordinating an immense series of facts in proof of the wisdom and goodness of the Creator. Dean Buckland, in his Bridgewater Treatise on "Geology and Mineralogy with reference to Natural Theology," beginning far back in time with the molten earth, has traced its forming layers of rock, metal, and coal as designed for future use, together with the monster floras and faunas adapted to its changing climates, ere it was fitted to become the abode of man. The same argument has been unfolded with scientific candor and learning, as well as devout enthusiasm, by President Hitchcock in his "Religion of Geology and its Connected Sciences." Professor George Fowne, in his Actonian Prize Essay, has exemplified the wisdom and goodness of God in the chemical history of the earth and its atmosphere, and in the marvellous adaptation of its inorganic substances to the organized beings which tenant its surface. On the same foundation, a like illustration has lately been drawn by the Rev. George Warrington from the phenomena of radiation. Professor J. P. Cooke, in his Graham Lectures on "Religion and Chemistry," has gathered fresh testimony

from the beneficent uses of oxygen, carbonic acid, nitrogen, and all the constituents of air, earth and water. Professor Guyot, in his Lowell Lectures on "Earth and Man," has sketched the wonderful pre-adjustment of the whole physical structure and furniture of the finished globe to the races and civilizations which have been cradled in its genial continents, nourished by its cloudy mountains, fanned with its balmy winds, and wafted, with growing wealth and power, across its mighty seas.

The invisible beauties of nature, as well as its more obvious utilities, have also been unveiled by the hand of a devout science. The distinguished mathematician, Charles Babbage, in his "Ninth Bridgewater Treatise," sought to illustrate arithmetically, by means of a calculating machine, after the manner of Paley, that divine forethought and design which pervade the evolution of the whole terrestrial mechanism, under both law and miracle, and unfolded a secret Book of Remembrance in those ethereal waves of light and sound, which perpetuate the impression of every word and deed of man. President Hill of Harvard has in like manner united Geometry and Faith, by exposing those vast, intricate problems of form and motion, with which an Infinite Intelligence is ever tasking the devout student of nature. President McCosh, with the aid of Professor Dickie, in his "Typical Forms and Special Ends," whilst not undervaluing the utilitarian arguments of other writers, has chiefly aimed to blend the evidence of order and beauty with that of adaptation and use, as found in the subtle harmonies of number, form and color which lurk in the crystal, the plant, the animal, gleam in the most hidden atoms and particles, and thus transfigure the whole earth with a divine intelligence and glory. Principal Dawson, in his Archaia, has sought to deduce an exact cosmogony and natural history from the very text of the Hebrew Scriptures as interpreted by the physical sciences. And numerous poets, essayists and popular writers, persuaded of the close correspondence between the word and the works of God, have been seeking to translate the whole course of nature into a parable of grace, by infusing into material phenomena an evangelical significance.

A "Sacred Philosophy of the Seasons" has thus been framed out of the scientific and scriptural meditations of various authors by Dr. Henry Duncan, and arranged in the order of the natural and civil year. Dr. Hitchcock, in his Religious Lectures upon the Four Seasons, has discoursed with philosophic faith upon the resurrections of Spring, the triumphal arch of Summer, the euthanasia of Autumn, and the coronation of Winter. An English layman, Dr. Chaplin Child, has skilfully wrought the latest results of physical research into a scientific commentary upon the winds, waters, fields, mountains, floods and storms, which are called to blend their varied voices in the "Benedicite" as daily chanted in the liturgy of the Church. It would seem as if the whole creation, animate and inanimate, as thus retraced and interpreted by the devout geologist, were at length bursting forth into a grand orchestral hymn of praise to the Creator, such as Dryden fancied in the very process of evolving the cosmos out of the ancient chaos:

> "From harmony, from heavenly harmony
> This universal frame began:
> From harmony to harmony
> Through all the compass of the notes it ran,
> The diapason closing full in Man."

But it is in connecting Geology with Genesis that the feats of religious eclectics have been most daring and fanciful. In the time of Woodward, Hook and Ray, as we have seen, the whole science was largely drawn from the Old Testament Scriptures, and after the rise of the two rival schools of Werner and Hutton, their disciples continued to make Moses speak by turns as a Neptunist or a Vulcanist. It is still fancied that Job was of the latter school, because he speaks of fire turned up from under the earth, and that St. Peter describes the earth standing out of the water and in the water as a uniformitarian might tell us of the secular subsidence of the seas and gradual upheaval of the Alps and Andes. But since it became probable by the speculations of La Place and Humboldt that the earth has passed through long and stormy epochs from its primitive chaos to its present cosmos, there has been a remarkable attempt to explain the creative process by some form of Satanic agency. The ancient Jewish

and Christian tradition, that chaos was produced by the fall of the angels, has been blended with modern cosmogonic theories. Schubert with daring fancy has maintained that our earth, together with the other planets and the sun, originally belonged to a brilliant astral system or starry nebula, within whose photosphere dwelt the principalities and powers by whom it was dragged down into darkness and ruin and thus made the scene of the new creation recorded in Genesis and verified by geology. De Rougemont, in his "History of the Earth according to the Bible and Geology," described the auroral earth as one of the morning-stars of Job, which was probably the abode of Lucifer and his legions, but through their revolt was converted into that dark, abysmal chaos of Moses, which became the cradle of the whole solar system as since developed in accordance with the nebular theory of La Place. Kurtz, maintaining that other worlds are still pure and unfallen, and consequently restricting the angelic revolt to our own planet, regards the chaotic earth as the residence of a previous creation, a devastated orb, which was restored to order and beauty through the six creative days, in spite of demoniac opposition. Dr. Anton Westermeyer, of Munich, in his "Old Testament Vindicated from Modern Infidel Objections," declares that the organisms which lie petrified in our mountains have only existed upon our earth since it was the dwelling-place of fallen angels, and are but the caricatures and inventions of Satan as he strove to hinder and miscarry the new creation. Delitzsch, starting with a dualistic conception of the world, describes chaos as a sort of non-divine matter, made antagonistic through diabolic agency, and the process of creation as a gradual triumph over Satan, renewed by Christ in the work of redemption, and yet to be completed in the final renovation. And mystical divines in all ages have viewed the whole material creation as a degradation of the spiritual creation, attending the primal fall of the angels.

The same eclectic spirit has also been seeking with intrepid faith to make the long geological eras coincident with the six creative days. During the early and middle ages, and until the present century, there could have been no question as to

the creation of land, sea and sky, fishes, birds and beasts in six days of twenty-four hours, especially since it was held that the very design of the creative fiats was didactic; but with the accumulating evidence of the globular form of the earth, its gaseous origin and igneous nucleus, its successive strata, and extinct floras and faunas, the breach between Geology and Genesis seemed ever widening, and scheme after scheme has been devised for their reconciliation. The first of these schemes would simply have retained the geological eras within days of twenty-four hours. Its advocates, still clinging to the traditional views of Woodward and Burnet, sought to leave the miraculous acts of creation intact and referred the results of palæontology to some subsequent cause or process within the present historic epoch. Mr. Granville Penn, an heir of the American statesman, in his "Comparative Estimate of the Mosaical and Mineral Geologies," maintained that as all plants and animals were created six thousand years ago, the fossil floras and faunas are but relics of Noah's flood. Fairholme, in his "Geology of Scripture," Young, in his "Scriptural Geology," and even the Bridgewater essayist, Kirby, with all their great physical attainments, held to this sort of diluvian dissolution and stratification of rocks, plants and animals as the only hypothesis consistent with the inspired record. Mr. P. McFarlane, with still more remarkable ingenuity, argued that the fossil floras and faunas were but ruins of Adam's fall, and in his "Exposure of Modern Geology" showed how the paradisaic globe might have shrunken in consequence of the apostacy, so as to form vast steppes or terrace-like series of vegetable and animal orders, which were afterwards successively submerged and petrified by the deluge. And Dr. Emmanuel Veith, in his "Origin of the Human World," has not only included all palæontology between Adam's fall and Noah's flood, but declares that the coal measures and turf-beds, volcanic rocks and lava streams are the mere ruins of paradise, no more denoting the proper works of creation than the mossy walls of Ninevah or the cinders of a burnt village.

The second conciliatory scheme would have inserted the geological eras between the six days and some primitive cre-

ation. Its adherents, while granting the evidence of strata, floras and faunas succeeding one another through unmeasured time, have endeavored to find space enough for their development in an interval before the present earth was formed. Dr. Chalmers, in his Review of Cuvier, suggested that long after the original act of creation recorded in the first verse of Genesis, there may have occurred the chaos and six days' works recorded in the following verses, and that during that intervening period may have flourished and decayed all the successive dynasties of organic life which geologists now find buried in the crust of the globe, but which would have formed an irrelevant parenthesis in the sacred history. Dr. Pye Smith in his able treatise on "Geology and Scripture" modified this theory of an omitted chapter in Genesis, by supposing that the chaos and six days' work were not only recent but local and supernatural, designed to furnish a paradise for Adam in Asia, whilst the rest of the globe was proceeding as for ages before under natural geological laws. Professor Andrew Wagner, the great palæontologist, in his elaborate "History of the Primitive World," maintained that the first verse of Genesis is a brief summary of the creative works in doctrinal opposition to heathenism and materialism, that the second verse affords a glimpse of a primitive chaos, and that from the third verse proceed the six days' works as new and special creations. Dr. Gerald Molloy, of Maynooth, in his recent treatise on "Geology and Revelation," has carefully collected the opinions of fathers, schoolmen and doctors, in favor of the interpretation that a vast interval of time may have elapsed between the creation of the world and the creation of man; long enough indeed to embrace all the myriad ages which geologists can claim. And in this general view have concurred various writers, such as Buckland, Sedgwick and Wiseman, Reinsch, Keerl and Shubert, Warrington, Paul and Jacobus, who have yet differed as to the nature and length of the six formative days which came after the chaos and original creation.

The third conciliatory scheme would expand the six days into creative epochs coinciding with the geological eras. When it was found that such long dynasties of plants, fishes and animals as are entombed in the strata could not possibly have

been created and fossilized in periods of twenty-four hours, it only remained to review the existing interpretation of the word "day," and in analogy with other scriptures regard it as an indefinite epoch, such as the day of salvation, or the day of judgment, or the day of the Lord; in short, as a vast creative era in the eternal life of that Jehovah with whom one day is as a thousand years, and a thousand years but as one day. Dr. Hettinger has maintained with Faber, that this principle of interpretation, so far from having been forced upon theology by modern science, is as old as St. Augustine, and would not have been new to Bossuet, who termed the Mosaic days six distinct developments. Eminent Protestant divines, also, such as Pusey, Hengstenberg and Tayler Lewis, have held the same opinion on exegetical grounds, and leading geologists, such as De Luc, Cuvier and De Serres, very early favored the attempt to show a correspondence between the biblical and scientific epochs of creation. The late Hugh Miller, in his "Testimony of the Rocks," comparing the fossil series of Cuvier with the successive creations of Moses, endeavored to identify the fourth, fifth and sixth days with the ancient, middle and modern periods of geology, termed the palæozoic, mesozoic, and kainozoic ages, thus affording a scientific interpretation of the second half of the hexæmeron. Professor Guyot, in his Lectures as reported in the Bibliotheca Sacra, adding the astronomical speculations of La Place and Alexander to his own geological researches, has at length completed a magnificent delineation of the whole history of creation, through all its cosmogonic eras, in which is exhibited successively during the first three days the formation of the heavens with their nebulæ, suns and planets, and during the second three days the formation of the earth with its climates, floras and faunas; the former including the azoic ages or inorganic era of matter, and the latter, the palæozoic, mesozoic, and kainozoic ages or organic era of life. But while many leading geologists and divines have thus been agreed in looking for a general correspondence between the two records of geology and Genesis there has been the greatest diversity as to the salient points in the parallelism. Professor Zöckler, in his "Primitive History of the Earth," assigned the palæozoic age of transitional

and carboniferous strata to the third day, when the land was divided from the water, and the first plants and trees were created. Ebrard also agrees with him in postponing the mesozoic and kainozoic ages to the fifth and sixth days, during which were created the fishes of the sea, the birds of the air, and the beasts of the field. Andrew Wagner, Schubert and Guyot, in order to explain the creation of light on the first day, and of plants on the third day, have supposed that as yet the earth was a nebulous star or self-luminous planet, with a photosphere, of which the auroral halo is a remnant, and that then, under the influence of such heat and light, a crude vegetation might have appeared long before the sun, moon and stars could become visible, or the climates and seasons be ordained on the fourth day as a preparation for the great organic epochs which were to follow in the fifth and sixth days. Father Bernuzzi, of Parma, in his "Divine Revelation and Geology," has referred the Laurentian age of fossil plants to the third day, the Cambrian or Silurian age of mollusks and shells to the fourth day, and the Devonian and Jurassic ages of fishes, birds and mammals, to the fifth and sixth days, and has suggested that the inspired writer may have omitted to mention the marine animals of the fourth day as not likely to be observed and unimportant to the narrative. Father Pianciani, in his "Natural Cosmogony compared with Genesis," has maintained that microscopic corals and plant-like animals may have been created even on the third day, and not noticed in the history in accordance with the hermeneutical principle of St. Thomas Aquinas, that Moses only brings forward what is visible to the eye, and distinguishable from the earth by apparent life and motion. Hugh Miller had already suggested a similar view by his theory of an inspired vision which should only exhibit the leading features and characteristic forms in each successive scene of the creation. But Principal Dawson, as if to undermine all these elaborate superstructures, has discovered in the lowest or Laurentian stratum a new fossil animal termed the "Eozoön Canadense," and hence been led to confine the whole palæontological record within the last two days of the creative week.

The fourth conciliatory scheme, and the climax of the

others, would treat the Mosaic days or geological eras as mere moments or phases of the creative activity. The grammatical and scientific difficulties accumulated in the previous schemes, seem to have occasioned a reaction, especially among Roman Catholic writers, in favor of regarding the sacred narrative as logical rather than chronological, as an ideal and not a real history of creation, sufficiently accordant indeed with science, but mainly designed for religious instruction. The dogma of the fathers, that all things were made at once, has been revived in the light of modern geology. It is argued that nebulæ, suns and planets, strata, floras and faunas must have been created simultaneously, even as they still coexist throughout space and time in the view of Omniscience, and that this simultaneous creation is simply represented by Moses as successive, as a series of six working days measured by sunrise and sunset, in mere accommodation to our finite modes of conception. Mr. J. P. Gosse, an evangelical churchman and fellow of the Royal Society, would seem to have been the first to broach such speculations by an ingenious treatise entitled "Omphalos," in which he argued that as Adam must have been created an adult yet with an umbilicus suggestive of birth, and as the trees must have been created full-grown yet with annual rings suggestive of growth, so the great globe itself must have been created in a mature state yet with strata, floras and faunas suggestive of long geological ages which had never actually occurred. Dr. Michelis of Münster, founder of a magazine styled "Nature and Revelation," and designed for the conciliation of the Church and Science, appears to have supported the mysticism of Augustine with the idealism of Hegel, by designating the creative days, with all their crowded annals, as mere timeless acts or thoughts of God, with whom to create is but to think, and who therefore thinks or creates without any succession of days or ages, the seeming succession in the inspired record being a mere concession to human weakness. Professor Reusch of Bonn, converted to similar views, has abandoned the hope of any exact parallelism between Genesis and geology, and maintained in his "Bible and Nature" that the six days are not six successive periods, but six logically

sequent stages of the creative activity, six actualizing divine ideas, six creative thoughts, and that it is our duty to believe that Almighty God could thus produce the earth as a fit abode for man in a single moment. In much the same spirit Father Walworth has disclaimed any scientific cosmogony in the hexæmeron, regarding it simply as a doctrinal exposition of the first article of the Apostles' Creed. And some Protestant divines, while fully accepting the results of science, seem inclined to treat it as a geogony rather than as a universal cosmogony, as a history of our earth alone written from a purely anthropocentric standpoint, with the view of assigning to man his true place in the teleological system of the Creator.

At length we may behold the whole biblical and scientific history of the globe blended by a similar eclectic treatment of such geological miracles as the Deluge, the Predicted Conflagration, and the Final Renovation of the Earth. These were favorite themes of the early geologists, when as yet the most extravagant catastrophism reigned in the science. Dr. Thomas Burnet, whose "Sacred Theory of the Earth," published with elegant illustrations, was praised in a Latin ode by Addison, sketched the chief religious epochs of the globe as great geographical changes; first its chaotic egg-like mass at Creation; then its equal nights and days and perpetual spring in Paradise; afterwards its present irregular configuration and climate caused by the Flood; and at length its renewal by the fires of the Judgment. Dr. Whiston then published a "New Theory of the Earth," in which, as we have seen, he verified these moral catastrophes by astronomical events, such as the incursion of comets and the perturbations of the planet upon its axis, causing violent changes in its structure and climate. Dr. Worthington soon followed with a "New Theory of the Earth," aiming to be more Scriptural as well as scientific; but simply becoming still more lavish in its use of the miraculous and catastrophic element. Cuvier, in his "Theory of the Earth," revived a number of these speculations, only himself to add another to the catalogue. And indeed for three centuries the literature of geology was filled with a succession of such sacred cosmogonies, one after another, like children's bubbles, living their little hour of applause.

The Deluge was naturally claimed by the Neptunian school of Woodward as a great terrestrial convulsion rather than a mere moral and local judgment. The whole fossiliferous crust of the globe was treated as its sediment, and all physical geography made to furnish its traces in the abysmal sea, the jagged mountain peak, the indented continent and inland desert, which were supposed to indicate the convulsive effects of retributive justice. An English Rector, Alexander Catcott, published a treatise on the deluge, in which, with the aid of the engraver, he graphically depicted the pre-diluvian world as embracing four concentric orbs: the outer, composed of the waters above the firmament; the next, of the atmospheric heavens; then, the solid crust of the globe; and last, the central abyss or foundation of the great deep, which was broken up at the same time that the windows of heaven were opened in order to produce the flood. The poet Thomson, in explaining how the course of the seasons became disordered, would seem to have had such a theory in mind, as he describes the universal burst of waters "o'er the high-pil'd hills of fractured earth,

> "Till, from the centre to the streaming clouds,
> A shoreless ocean tumbled round the globe."

Supposed relics of such a deluge were piously collected in cabinets and museums and made the theme of learned and devout discussions. Father Torrubia found the remains of antediluvian giants in Spain; Increase Mather forwarded similar relics to the Royal Society in London; and Scheuchzer discovered in Germany the famous fossil infant, or human witness to the deluge, which was afterwards identified by Cuvier as a salamander, but not until it had furnished inspiration for some pathetic verses in which it was apostrophized as an innocent sufferer for the sin of Adam.

The predicted conflagration of the earth was, in like manner, treated by the Plutonian school of Ray and Hooke as a vast volcanic catastrophe rather than a mere prophetic picture of the destruction of Jerusalem, or of the passing away of the present political powers of the world amid great providential judgments. Modern geologists, such as Pye Smith and

Hitchcock, and eloquent divines, such as Griffin, Chalmers and Cumming have continued so to depict it. Its warnings and precedents have been found in the sulphurous storm which destroyed the guilty cities of Sodom and Gomorrah, and in the fiery vengeance which overwhelmed the dissolute inhabitants of Herculaneum and Pompeii. Its materials and portents have been sought in the very structure and aspect of the globe. The whole under-world has been regarded as a vast magazine of combustible materials, ever and anon smoking and kindling as in smothered wrath, "kept in store and reserved unto fire for the day of judgment and perdition of ungodly men." The electric flash and shock, the vaster tempest of lightning and thunder, making the whole concave ablaze and resonant, has been claimed as but the mimic rehearsal of that last, dread storm, wherein "the heavens being on fire shall pass away with a great noise." The earthquake and volcano, causing vast continents to tremble over the glowing mass beneath, and mountains to disgorge, like flaming mouths of hell, and flood whole provinces with molten soil, are viewed as the very process by which yet the elements shall melt with fervent heat and all these things shall be dissolved. And every star that blazes and vanishes away in the night, telling of some other world destroyed, is but a harbinger and pledge of that day when the earth also and the works that are therein shall be burned up;

> "The cloud-capt towers, the gorgeous palaces,
> The solemn temples, the great globe itself,
> Yea, all which it inherit, shall dissolve,
> And, like an unsubstantial pageant faded,
> Leave not a rack behind."

And both catastrophists and uniformitarians would seem to have agreed in regarding the predicted renewal of the earth as literally a material transformation of its whole structure, scenery and climate rather than a moral and spiritual change in the character of its inhabitants. By the former school of Scripture geologists all the great physical evils of famine, drought and pestilence were treated as the penalties of original sin, the blighting of Paradise by the fall of Adam. The earth was then covered with thorns and barren-

ness, that by the sweat of his brow man should eat bread. The whole creation was made subject to vanity; and instead of the perpetual Spring of Eden was miraculously substituted the distracting march of the seasons through the middle zones with the long wintry nights of the poles; as Milton has hinted:

> "Some say, He bid His angels turn askance
> The poles of earth twice ten degrees and more,
> From the sun's axle; they with labor pushed
> Oblique the centric globe."

After the sin of man had reached its crisis in the Deluge, the ground was to be no more cursed for his sake. The rainbow was then set in the cloud as the sign and pledge of an amnesty between God and the earth, during which summer and winter, seed time and harvest, should not cease. And when this long era of grace is done, and the judgment of the race is completed, the earth shall again be destroyed, then by fire as once by water, and (in the eloquent language of Chalmers) shall melt with a heat so fervent as to be utterly dissolved, and become without form and void, in order that out of the second chaos it may be made to arise with other aspects of magnificence and beauty, as a fit abode of righteousness.

But according to the uniformitarian school of physical geography, the structure of the globe has been simply preadjusted to the mixed character of man as a dispensation of mingled cursing and blessing, and may even be gradually modified through human action, in the progress of religion, science and civilization. Already many of its vast insalubrious regions, by his organized industry, have been made to rejoice and blossom as the rose; its hidden mineral resources, through the long epochs of culture, have been so developed as to produce iron for stone, silver for iron, and gold for brass; its subtle agents of heat, light and electricity have been yoked in his service, until many run to and fro, and knowledge is increased. And if meanwhile, as some geologists tell us, the earth itself is ever slowly nodding through the precession of the equinoxes between the epochs of ice and of fire, or revolving with the sun between nebulous mist and planetary life, that miraculous time might come, when its snows and heats should be blended in

the vernal year of a restored paradise, and the tree of life shed its fruit every month for the healing of the nations.

Eclecticism in Anthropology.

The scientific anthropology has also been entered and traversed by the same eclectic spirit. Animal and human physiology, philology, archæology, as fast as they emerged, have been claimed as biblical sciences, serving to illustrate the divine attributes and confirm revealed doctrines. Since the time of Augustine, it has been the orthodox faith that the whole human race was created in the divine image, with dominion over the brutes, in a paradise of innocence; but after the fall of Adam, judicially destroyed by a universal flood; then renewed from the loins of Noah in connection with surviving members of the previous fauna preserved in the ark; and at length miraculously dispersed from the Tower of Babel over the face of the earth, in different tribes and nations, with increasing confusion of speech, and ever-lapsing or perverted forms of culture. And in supposed agreement with this anthropology, pious efforts have long been made to trace the effects of the apostacy in animal remains which were buried ages before the appearance of man, to find traditions of the deluge among savage tribes, and the monuments of Babel on remote islands of the sea, and to vindicate the divine vengeance as still expressed in the pains, diseases and deformities which afflict the human frame.

The theistic argument of the anthropological sciences, as hitherto pursued, has been made to embrace the evidence of wise and benevolent purpose both in the special structure of man and in his physical relations to the whole animate creation. As early as the fourteenth century, according to the Jewish Messenger, Albo, a Castilian rabbi, anticipated many a famous argument since his day, by illustrating the far-reaching care of God in providing for the perfectibility and preservation of the animal and human species. Archdeacon Paley, though he did not neglect other provinces of natural theology, devoted himself specially to the admirable mechanism of the body, as illustrated by that of a watch, to examples of prospective contrivance for the care of the young, to the phenomena of in-

stinct, to the marvellous adaptations and compensations among the different organs of the animal economy, and to the more general relations between all animate and inanimate nature. The Rev. William Kirby, in his Bridgewater Treatise on the "Creation of Animals," dwelt with careful minuteness upon the functions and instincts of infusories, polyps, radiaries, cephalopods, etc., as alike resplendent with marks of divine wisdom. Dr. Peter Mark Roget, in the treatise on "Animal and Vegetable Physiology," enlarged upon the benevolent intention of the Creator to secure the welfare of individuals as seen in the conservative and reproductive functions, both mechanical and vital, of the different species of mollusca, articulata and vertebrata. Dr. William Prout, in the Treatise on "Chemistry, Meteorology and Digestion with reference to Natural Theology," drew his argument from the pre-adjusted proportions of air, water and land, for the sustenance of life, the adaptations of climate to the inhabitants of the different zones, the correspondence between the external mechanical organs, and the internal digestive functions of carnivorous or herbivorous tribes, and the vital relations between plants and animals in the general economy of nature. Sir Charles Bell, crowning this series of treatises with his masterly monograph on "The Hand," has traced its beneficent design as the distinguishing member in the human frame, the organ of touch and sensibility, the instrument of mechanical and artistic skill, and the prime mover in all progress and civilization. In our own day, and with a direct bearing upon current speculations, Professor Henry J. Clark, in his work on "Mind in Nature," has made it his aim to refer the origin of life and the development of animals to a foreknowing Power in the universe, which predetermines and attends all successive and contemporaneous vital phenomena. And indeed the chief authorities in comparative zoölogy, from Linnæus to Agassiz, have never scrupled to recognize a divine wisdom not merely in each organ and function, but in that whole organic scale of advancing types which at length become recapitulated in Man, as he stands at the summit of living nature,—

> "The beauty of the world! the paragon
> Of animals!"

But it is in that dim archaic region of anthropology bordering upon geology, where man first appears upon the earth, that the eclectic spirit is now most blindly and rashly venturing. So long as Adam was pictured as a clay image, moulded Promethean-like during the closing hours of the creative week, the sacred record seemed simple and consistent. And even after palæontology had unfolded its vast organic scale of fossil and living species, through countless ages, from the mollusk up to man, it was not very difficult to connect it with the generations of Genesis. Indeed, by the great majority of scientific interpreters, it is still treated as a series of abrupt creations. The classifications of naturalists, from the times of Linnæus and Cuvier, with their serial orders, genera, and species, are simply accepted as so many archetypes or ideals of the Creator, which He has separately produced and realized in fulfillment of a foreordained scheme, terminating in man as the image of God and lord of nature. Professor Owen declared that in the Divine mind the knowledge of such a being as man existed long before man appeared upon the earth. Agassiz, in his Zoölogy, not only denied that the growing resemblance of animal and human species in the Secondary and Tertiary epochs was due to any parental descent from the earlier to the later mammals and reptiles, but maintained that their only connection is to be sought in the view of the Creator Himself, whose aim in successively creating all the different types which have passed away was to introduce man upon our globe, as the end toward which the whole animal creation has tended from the first appearance of the palæozoic fishes. And Hugh Miller, in his "Testimony of the Rocks," declared that Owen and Agassiz, by thus retracing the divine archetypes which preceded the glorious form of man, were but echoing the hymn of the Psalmist, "In Thy book all my members were written, which in continuance were fashioned when as yet there was none of them."

Proceeding upon such scientific views, some fanciful writers have even depicted with scenic effect the creative fiats, by which God called forth plant, bird and beast, and saw that each was good. Schubert daringly describes them as the productions of a creative art, which at every throb of its activity

exulted in beholding the manifold forms of life. Keerl, in his "History of Creation," with still bolder fancy, represents Nature in the process of producing man, as shattering mould after mould, and hiding them away in rocky graves, till she found the finished ideal with which alone she could be satisfied. Schlegel, in his "Philosophy of Life," maintained that poisonous reptiles and other malevolent monsters are not divine creations, but Satanic perversions of the productive energies of nature, and the anthropoid ape especially but a spiteful parody upon the image of God in man. Delitzsch, in his "Genesis," agrees with Ebrard in identifying the catastrophic phenomena of Plutonism as but the volcanic birth throes of the earth, when, at the divine command, it brought forth the mammals of the tertiary epoch, and would thus explain the disarrangement of the fossiliferous strata which preceded the appearance of man. And monstrous as would seem the miracles of a sudden creation of species, did we stop to fancy them, yet the great mass, probably, have still no clearer view than that of Milton in his Paradise Lost:

> "The grassy clods now calv'd; now half appear'd
> The tawny lion, pawing to get free
> His hinder parts, then springs as broke from bonds,
> And rampant shakes his brinded mane."

There is, however, a large and increasing class who are now seeking to blend the whole palæontological series in one continuous creation or creative evolution. When as yet it had been but partially restored and was still broken by long gaps and missing links, the interposition of a Creator seemed necessary at every step; but as these were gradually filled and supplied, and supposed laws of transmutation and descent were suggested, it has become a temptation to admit such laws into the creative process, with other natural laws, as but the expression of the divine wisdom; and by degrees the whole animate creation has been surrendered to their sway. At first only the vegetable and animal kingdoms were conceded to evolutionism. Since Darwin, Hooker and Wallace have been joined by such veteran leaders as Lyell, De Candolle and Asa Gray, and the younger working naturalists have followed them in a body, they have begun to receive

recruits from the ranks of earnest laymen and zealous divines, bringing with them the orthodox standard of creationism into the very thick of the battle. Chancellor Winchell, in his "Doctrine of Evolution," accepts it as the law of the Creator throughout the inorganic world, and possibly also the lower organic kingdom, and believes it to be consistent with the Scriptures as interpreted by many of the greatest divines and theologians. Dr. Brown, of Berwick, as a member of the Evangelical Alliance, in discussing the "Religious Aspects of the Development Hypothesis," claimed it as applicable certainly in the vegetable world and probably in the animal world, and as compatible with the articles of the Westminster Catechism. The Rev. George Henslow, in his Actonian prize essays on "Evolution and Religion," declares that to him it is infinitely more probable that all extinct and living species have been developed by natural laws than that they should have been severally due to creative fiats, though he is not yet prepared to admit that man has been evolved by precisely the same processes as the horse from the palæotherium. St. George Mivart, the distinguished Roman Catholic naturalist, in his work on the "Genesis of Species," holds evolutionism to be consistent with the teachings of Augustine, Aquinas and Suarez, and admits that it is the method of creation throughout living nature, including even the animal frame of man, but for the addition of the human soul requires a new special act of Divine Power. Mr. St. Clair, in a work entitled "Darwinism and Design or Creation by Evolution," makes it his especial aim to show that the theory, so far from being anti-biblical, is a new illustration of the wisdom and beneficence of God throughout His creation, from the birth of the solar system to the origin of moral species. It will be but a step further, to blend evolutionism with creationism in the genesis of the first Adam. Dr. Lange, in his Commentary, hints profoundly that there must have been the highest excitation and effort of the earth in the formation of man as the chief work of creation, and beautifully depicts him in the same moment waked into life and intelligence as by a kiss of divine love. Professor Tayler Lewis, with a still more scientific view, not only rejects the idea of an instantaneous or artificial

creation of man from nothing or from crude matter, as a mere manipulated statue or dead organization; but seeks to trace his formation through the whole previous process of nature, from the lowest up to the highest animal type, with connecting links, until the point was reached where the human species by a special act was constituted in the divine image. And when once the ideas of time, causality and organic process have thus been admitted in this region, it may not be long before the secular evolution of Adam from the animal species shall be claimed to be as scriptural and orthodox as that of the animal from the vegetable races, or that of the organized planet from the inorganic nebula.

The same eclectic spirit is also seeking to blend the new speculative ethnology with the Mosaic tables of genealogy. Until the discovery of the American and Polynesian tribes, it was easy to regard Adam as the father of the whole human family, and Noah as the founder of all existing nations, and even since that discovery the orthodox traditional ethnography has long held its ground. Learned investigators, such as Bochart, Le Clerc, Michaelis, and Sir William Jones, have maintained that the three great continental races of Asia, Africa and Europe, are the descendants of the three sons of Noah; of Shem, Ham, and Japhet. And commentators, such as Lowth and Bush, have sought in the subsequent history and present condition of those races a fulfilment of the predictions of Noah to their progenitors; of the blessing upon Shem, in the religious mission of the Shemitic nations of Asia, the founders of Judaism and Christianity; of the benediction upon Japhet, in the great civilizing and colonizing nations of Europe; and of the curse upon Ham, the servant of servants, in the Canaanites who were expelled by the Hebrews, and in the Africans, who were subjugated by the Romans, and have since been enslaved by the English in the American Colonies.

But the difficulty of including all tribes and peoples in this genealogy has combined with theories of the multiple origin of the species to suggest new schemes of reconciliation. Agassiz, reviving the doctrine of Peyrère as an hypothesis, maintained that the truth of both Scripture and science would be conserved by accepting Adam as the head of the Jewish or

Caucasian race, with its three great Shemitic, Hamitic and Japhetic branches in Western Asia, and yet allowing the coexistence of other races created in the same human nature, but not yet brought under the divine economy, such as the inhabitants of Nod, among whom Cain married and built a city. Dr. John Pye Smith, in his "Geology and Scripture," consistently with his idea of a special local creation, cautiously admitted that the proof of a Hamite and pre-Adamite race, if established, would not necessarily be inconsistent with the statement in Acts, that God hath made of one blood all men, since they might have the same psychological structure though created at different geographical centres; nor would it unsettle the doctrine of the first Adam, since he might still serve as a figure of Christ in the new covenant, and the mystery of original sin would remain the same inscrutable fact as upon the other hypothesis. Dr. Dominick McCausland, in his work entitled, "Adam and the Adamite," has endeavored to harmonize Scripture and ethnology, by maintaining that the Book of Genesis refers almost exclusively to the Adamic race, which was created as the last, and not the first, of other pre-Adamite races, known as the African and Patagonian savages of the present day, and which was introduced among them as a new and higher species, made in the divine image and placed under a supernatural dispensation, with a view to the ultimate redemption of all mankind. The anonymous author of "Primeval Man Unveiled, or the Anthropology of the Bible," having maintained in his previous work on "The Stars and the Angels," that the angelic and human natures are the same, now argues that the pre-Adamite remains in different parts of the globe, claimed as denizens of the stone, the bronze, or the iron ages, are but the degenerate bodies of fallen angels, the relics of a Satanic race which once flourished with abortive strength in Central America, and thence bequeathed a diabolic civilization to India and Egypt, when as yet Europe was an abode of primeval savages bearing the same relation to their brethren in Guatemala and Yucatan that the cultivated nations of England and France now bear to the Patagonian and the Hottentot. And thus the wildest dreams of angelology are strangely blending with the latest speculations of the ethnologist.

In the same rash manner, the new discoveries of the archæologist are pressed into union with the biblical chronology and history. For centuries it has been the orthodox belief that the whole human epoch may be included within a period of six thousand years; that after the first two thousand years the entire race, except the family of Noah, was destroyed by the Deluge, and that during the next two thousand years it became scattered over the earth with an ever deteriorating civilization. And a vast amount of learning has been expended in verifying this opinion. Leading chronologers, such as Usher, Hales and Prideaux, have sought to combine the evidence of profane with sacred history at every point of contact. Mythologists, such as Bryant, Faber and Harcourt, have traced the coincidence of Gentile and Jewish, Pagan and Christian traditions, as between Vulcan and Tubal-Cain, Apollo and Jubal, Deucalion and Noah, the Titans and the Babel-builders. And antiquarians, such as Thorowgood, Montezini, Boudinot, President Styles, and a host of others, have endeavored to identify the Aborigines of America as the expelled Canaanites, or the lost tribes of Israel, or wandering Jews who anticipated the discovery of Columbus, or emigrant Tyrians to whom the Apostle Thomas had preached Christianity.

But the alleged discovery of some antediluvian monuments and records in Egypt, Assyria and Central America, and of pre-historic skulls and implements in Denmark, France and England, together with theories of the secular development of the human species, have led to an expansion of the historic era from thousands to millions of years, with corresponding efforts to adjust it to the sacred records. By many, indeed, the old biblical chronology is simply re-affirmed or but slightly extended. Reginald Stuart Poole, in his "Genesis of Man," dates the creation of Adam about the year 5361 B. C., and the Deluge about the year 3099 B. C., and claims that at the epoch of the fourth dynasty in Egypt, 2400 B. C., as high a civilization existed as at any later period. Piazzi Smith, in his works on the Great Pyramid, maintains that it was built about 4000 years ago, by the descendants of Noah, under divine inspiration, as a meteorological and astronomical monu-

ment, expressing in its position, size, weight and temperature more scientific knowledge than is possessed at the present day; that the other pyramids, cromlechs and mounds of Asia, Europe and America are but debased imitations of a later date; and that the stone, bronze and iron epochs of the archæologist are simply co-existent rather than successive stages of barbarism and civilization, now occurring in different parts of the earth. Mr. James C. Southall of Richmond, in his learned treatise on the "Recent Origin of Man," also discards the chronometry of the chipped flints and bone implements, and finds the beginnings of all civilization within 2700, or at most 4000 years B. C., in the industrial arts of Tubal-Cain, the fine arts of Jubal, and the cities of Nod and Enoch, as renewed after the Flood among the Egyptians, Chinese and Assyrians.

By another growing class, however, the old biblical chronology has already been largely expanded or virtually abandoned. Bunsen claims that there is no chronological element in Genesis. Dr. Hodge, as if anticipating such a result, admits that the Scriptures do not teach us how long men have existed on the earth, their tables of genealogy being simply intended to prove that Christ was the son of David and of the seed of Abraham. Dr. William H. Green, in his "Pentateuch Vindicated," explains that the sacred registers, consistently with their design, do not include all the generations or births in a given line, and that, in some cases, a single progenitor is said to have begotten several whole nations, the Jebusite, the Amorite, the Girgasite, and the Hivite. It has also been suggested that the names of the patriarchs may represent not only individual progenitors but successive dynasties, or leading families, lasting through long periods, like the Saxon and Norman successions, or the houses of York, Lancaster, Stuart and Hanover. And other writers, accepting the pre-Adamite view, find ample space outside of the Jewish or Caucasian genealogy, for the oldest monuments of pre-historic barbarism and non-Adamic civilization. Macausland, though he refers the ruins of Egypt and Mexico alike to a Hamitic race of Babel-builders long since extinct, argues that a prediluvian civilization was founded by Jubal and Tubal-Cain in

Central Asia, and thence flowed eastward, with the exiled Cain among the pre-Adamite savages of China, where it still lingers, stagnated by the Mongolian blood. The author of "Primeval Man Unveiled" conjectured that the ruins of Central America indicate a pre-Adamic and Satanic civilization, whose Eden could be followed by no Calvary, and whose Tubal-Cains and Jubals flourished as the founders of arts and sciences, without a Seth or a Noah to save them from hopeless degeneracy. The same writer agrees with Miss Frances Rolleston, the author of "Mazzaroth," in finding remnants of an antediluvian theology in the constellations, such as the Virgin, the Scorpion, the Centaur, the Goat, which the patriarchs are supposed to have invented and used as prophetic types of the promised Messiah, the conflict with Satan, the incarnation, and the atonement.

The sacred philologist is also seeking prematurely for a biblical theory of languages as well as races. It has been held by the rabbins, the fathers, the schoolmen and the reformers, that the Hebrew tongue was divinely taught to Adam in Paradise when he gave names to the animals, and thenceforward continued the one, universal language after the Deluge, while the whole earth was still of one speech. And notwithstanding the endless diversities in structure and etymology which now prevail, many leading linguists, on the theory of a common origin of languages as held by Latham and Max Müller, have been striving with immense learning and ingenuity to trace back all existing dialects, through the inflexional, agglutinate and monosyllabic stages, to the one primitive tongue of Adam and Noah. Arthur James Johnes was countenanced by Prichard in an effort thus to collect the philological proofs of the original unity and recent origin of the human race. Bunsen, in his "Philosophy of Universal History as applied to Language and Religion," has argued that the high inflexional languages of Europe and Asia are of the same stock; that the agglutinate tongues of America and Polynesia are scions of the Asiatic; and that the monosyllabic Chinese is the oldest monument of the original pre-diluvian speech, borne away before the flood to the high table-land of Mongolia or land of Nod, in which Cain settled. The Rev. Joseph Edkins, of

the Ningpo Mission, in his work entitled "China's Place in Philology," maintains that the Chinese are descendants of Ham, who migrated eastward after the Deluge, and that their language is a relic of the primitive monosyllabic tongue of Adam and Noah, akin not only to the Hebrew and the Greek, but even the English, in roots, syntax and inflexional growth. Mr. Lewis Morgan, in his elaborate Smithsonian treatise on "Systems of Consanguinity," has projected a scheme of philological and genealogical inquiries tending to show that the North American tribes, together with other savage as well as civilized races, are both in blood and speech the branches of one human family, which has risen from a state of promiscuous intercourse to its present domestic and social refinement. But the difficulty of compressing the enormous growth of so many races and languages within the received chronology, combined with theories of their plural origin as advanced by Steinthal and Schleicher, has led some devout scientists and divines, like Agassiz and Macausland, to treat the rude inorganic tongues of China, America and Polynesia, as separate products of pre-Adamite races, among whom Cain was exiled, while the more refined and highly organized languages of the Caucasian or Adamic race are claimed as relics of the divine paradisaic speech, which the great confusion at Babel has only broken into brilliant dialects, the still jarring echoes of a primeval harmony.

The great miracles wrought for the human race under both dispensations, have also ever been claimed as true divine interpositions, admitting of a scientific verification. It was maintained by Bryant and Harcourt, that the ark which saved the second father of mankind still figures in the traditions of all nations, and its stowage was elaborately calculated by Bishop Wilkins and Sir Walter Raleigh, who proved that it could receive in its three stories Noah and his sons, with their families and provisions for their maintenance, pairs of all the domestic animals, with an adequate supply of fruits, vegetables fodder, and 1,825 sheep as food for the beasts of prey. The tower of Babel was identified among the ruins of Babylon, and the great confusion and dispersion still attested by the existing jargon of languages and conflict of nations. The Messianic

prophecies were corroborated by a concurrent Gentile tradition as seen in the visit of Balaam and the Magi of the East. The incarnation also had its dim caricature or presentiment in the avatars of the Hindoo and the theogonies of the Greek. According to many writers, the cures of the sick, blind and lame, were genuine miracles of love and power, which were not restricted to the Apostles, but afterwards repeated by saints and martyrs, and are to this day possible, according to promise, in answer to the prayer of faith. The transfiguration, resurrection, and ascension of Christ, simply anticipated and exemplified that glorious humanity which is yet to appear on the scene of the renewed earth as the Second Adam of another paradise. Even the animal creation, it is conjectured, will share in the redemption as it has also shared in the apostacy. Dr. Kirby could conjecture that there were no carnivorous beasts in Eden. Professor Goldwin Smith has suggested that man himself, as he becomes civilized, grows less carnivorous and more kindly in his relations to the brute creation; that the animal races so participate in his progress that the tame predominate over the wild species, and that their powers of domestication and education are on the increase. Hosts of divines, poets and philosophers, have also held with Bishop Butler, that animals may be immortal and play some important part in the perfected human system. And if the civilized dog, as compared with his wolfish ancestor, be taken for a harbinger of such a millennium, it might seem but the natural growth and miraculous flower of organic nature, for the wolf to dwell with the lamb, the leopard with the kid, the calf with the young lion, and a little child to lead them.

The physical sciences, as thus traversed by the eclectic spirit, have been filled with the exploits of a daring faith, as brilliant, but often as useless, as the mere pastime of a tournament.

Surveying next the psychical sciences, we shall there behold elaborate systems of blended thought and faith, which for centuries have served as the strong-holds of orthodoxy, but seem now becoming like moss-grown fortifications, made useless by a change of base and of tactics. In contrast with

the devout speculations which we have traced in the physical sciences, these more sacred tenets are still claimed as the doctrines of Scripture, as well as true theories of science; and it is only now and then that a few religious eclectics have been rash enough to abandon them for any new scientific opinions that have been broached in their place.

Eclecticism in Psychology.

The whole scientific psychology has thus been long held and defended as a purely theological province. Owing to the imperfect state of the sciences of logic, ethics and æsthetics, the crudest notions were blended with biblical teachings by the rabbins, fathers, schoolmen and reformers. The different mental and moral faculties were metaphorically treated as functions of the reins, the bowels, the heart, as well as of the external senses and members, and as such requiring to be cleansed, remedied and renewed by divine grace. The dual and triple constitution of body, soul and spirit was based in Scripture as reflected by the two-fold nature of Christ and the Trinity of Divine Persons. And even the later biblical psychology does not seem to have advanced very far beyond the traditional and popular stand-point. Bunyan depicted it allegorically in his "Holy War" by representing the whole Christian life as a conflict of infernal and supernal powers for the possession of the city of Man-soul with its eye-gate, ear-gate, and mouth-gate and its various personified thoughts, passions and faculties. Dr. George Combe, with less of metaphor, has endeavored to reconcile the psychical map of phrenology with the claims of orthodoxy. Coleridge even sought for the Kantian distinction between the understanding and the reason in that between the mind of the flesh and the spirit as defined by St. Paul. Delitzsch still finds the ancient trichotomy, or triple human constitution, in the creation of man as a living soul resulting from the union of body and spirit. And now and then faulty arguments for the divine benevolence are built upon ethical and æsthetical theories which do not stand the strictest tests of mental science, as when the imagination and the conscience are treated as susceptible to beauty and goodness, and not also to deformity and sin.

The proper theistic argument of the psychological sciences has been made to include proofs of the divine goodness and justice both in the mental constitution and in its wonderful correlations with external nature. The earlier theists, more especially occupied with the physical sciences, only touched incidentally upon the argument. The two Balguys, father and son, seem to have been the first to attempt it with their treatises on Beauty and Virtue, and the Divine Benevolence vindicated against sceptics. The didactic poets, from Akenside to Campbell, may have practically promoted it by their strains upon the pleasures of Imagination, of Hope, and of Memory. Paley, in his chapter on the goodness of the Deity, has sketched the superadded pleasures of animal sensation, in youth and age, through summer and winter; the peculiar enjoyments of rational beings in the exercise of choice, the acquisition of property and the pursuit of knowledge; and the philosophical alleviations of the moral enigmas and evils which distress the reason and conscience. Butler announced the foreseen pains and pleasures of moral actions to be the evidence of a divine Lawgiver, and the actual rewards and punishments of His government. Dr. Chalmers, in his Bridgewater Treatise on "The Adaptation of External Nature to the Moral and Intellectual Constitution of Man," after carefully distinguishing the nature of the reasoning, has gathered proof of the Divine wisdom, goodness and justice from the different faculties and laws of the mind, the pleasures and miseries of its virtuous and vicious affections and habits, and the corresponding provision in the whole material and social system for gratifying and disciplining its higher powers and capacities. President McCosh, in his chapter on the correspondence between the mental and the material worlds, has traced evidences of their pre-established harmony in the images of the fancy, the conceptions of the understanding, and the constructions of the imagination as together conspiring to secure the welfare of man and the glory of the Creator. The Rev. Henry Wace, in his recent Boyle lectures on "Christianity and Morality," has reinforced the argument from conscience for a personal God, moral Creator, and spiritual Governor of the world, in answer to the doubts which have been thrown upon such reasoning. It is not

improbable that the new evolutionist school of psychical science may yet offer fresh theistic proofs of an absolute Mind foreseeing and directing the development of thought as well as of force. And indeed all the great, comparative psychologists, from Leibnitz to Coleridge, and to Lotze, have never failed to perceive a divine wisdom in each mental process and law, as well as in those high accessional perfections of the human spirit, the will, consciousness and reason, which surmount mere instinct, sensation and life, as Raphael taught in paradise:

> —flowers and their fruit,
> Man's nourishment, by gradual scale sublim'd,
> To vital spirits aspire, to animal,
> To intellectual; give both life and sense,
> Fancy and understanding. Whence the soul
> Reason receives, and reason is her being,
> Discursive or intuitive.

But no sooner do we pass beyond the empirical psychology into these more speculative regions than we find the crudest eclecticism still prevailing, in regard to such questions as the origin and destiny of the soul. The traditional dogmas concerning the creation and propagation of the human spirit have simply been re-defined on new psychological principles. Even the doctrine of a pre-existence of all souls in God, originally based, by Origen and Philo, upon the Platonic sentiment of reminiscence of a former state, and since renewed by Henry More, has appeared in the schools of Kant, Schelling and Schubert, who endeavored to explain the origin of evil by a sort of previous probation and metempsychosis. The younger Fichte denies that the divine image could descend by generation, from father to son. Julius Müller, in his "Christian Doctrine of Sin," maintains that pre-existent souls for a former apostacy have been imprisoned in human bodies. Dr. Edward Beecher published a treatise entitled the "Conflict of Ages," in which by the same theory he essayed to settle the whole controversy as to the origin of evil and the fall of man. And Wordsworth, in his noblest poem, "The Intimations of Immortality in the Recollections of Childhood," has expressed the doctrine of divine emanation and reminiscence in lines which will endure as long as the language:

"Our birth is but a sleep and a forgetting:
The soul that rises with us, our life's star,
Hath had elsewhere its setting,
And cometh from afar.
Not in entire forgetfulness,
And not in utter nakedness,
But trailing clouds of glory do we come
From God, who is our home."

Creationism also, as held by Lactantius and Aquinas and re-defined by Calvin, is still retained on the basis of the Cartesian definition of the soul as a spiritual substance directly created and infused in the human organism before birth by the Father of Spirits in distinction from the fathers of our flesh. Dr. Hodge, agreeing with the Augustinian view, describes such a creation as a special act of divine power, mysterious, yet not miraculous, like the creation of physical life in a seed or an embryo; and holds that it is the only doctrine consistent with the immateriality of the soul and the sinlessness of Christ. The Rev. J. B. Heard, in his "Tripartite Nature of Man," whilst admitting that the body and the soul are propagated under natural laws, as may be seen in the hereditary genius of the Sheridans, Coleridges and Herschells, maintains that a third principle, the spirit, pneuma or conscience, is created, regenerated and made immortal as the basis of consciousness in the intermediate state and the chief attribute of the spiritual body in the resurection. Dr. Martensen, in his Dogmatic, inclines to a modified creationism which would admit the immediate action of God as to the production of the soul, while it conserves what is true in the rival doctrine, as to a propagation of the animal life. Günther and Lange take similar views. But the most pronounced traducianism of Tertullian and Luther is likewise finding advocates as a rational explanation, not only of the doctrine of hereditary depravity, but of such psychological phenomena as the likeness of parent and child in soul as well as body, and the transmission of moral and intellectual traits no less than physical features. Delitzsch, holding to a sort of ideal pre-existence of all souls in the divine mind from the beginning, declares that any new creative energy at their birth would be inconsistent with the rest or Sabbath of the Creation during

this age of the world, as well as with the facts of psychology. Professor Frohschammer, of Munich, in his work on the "Origin of the Soul," defines traducianism as a secondary creation by the creature, and terms it generationism. And Dr. Krauth, in his "Conservative Reformation," with remarkable clearness and precision has maintained that the soul is no more immediately created than the body, that the one, as the other, is only created through the parents as the divinely ordained organ of its production, that the spiritual likeness of child and father is obvious and intimate, and that therein is mirrored the inscrutable mystery of the eternal generation of the divine Son by the Absolute Spirit. There is, however, a grosser traducianism which seems likely to return in connection with the new, materialistic speculations of our day, somewhat like the paradoxical attempt of a forgotten school of English divines in the last century, such as Hills, Woolner and Dodwell, who strove to base the notion of a material origin of the soul in Scripture as well as reason. Already Mr. Jonathan Langstaff Forster, in his "Biblical Psychology," has maintained that the existence of the soul as a distinct personal entity is a Platonic rather than a Scriptural doctrine, and the mere relic of a heathen psychology. And such views have even been associated with the doctrine concerning the derivation of the human nature of Christ. It will not be surprising if the latest evolutionary psychology of Spencer, Maudsley and Chauncey Wright shall yet find some advanced divines to champion it as the implicit teaching of Scripture.

In the same manner, the theory of the will or doctrine of human conduct, still continues a fruitful theme of devout speculation. Every dogmatic system of divine grace turns upon the view taken of the active powers of the soul; and the rival schools of libertarianism and necessitarianism, as we have seen, have yielded corresponding dogmas concerning predestination, regeneration and responsibility. English divines of the former school, such as Cudworth, More and Howe in their controversies with Hobbes and Spinoza, and at a later period Samuel Clarke and Price in their discussion with Leibnitz and Priestly, consistently with the hypothesis of free-will,

maintained that human actions are simply foreknown, not foreordained by God; that the soul is renewed through its own agency; and that moral accountability is measured by ability and opportunity. And the same psychological dogmas have since been re-defined with still more acuteness by American divines, such as Whedon, Taylor, Beecher, and Finney who, in opposition to Edwards and the Princeton Essayists, have held that the divine pre-ordination is contingent upon human free-will, that self-determination and full ability are essential to moral agency, and that regeneration is but a change of purpose or a moral choice between good and evil. The necessitarian school of divines, meanwhile, from their opposite premises have been inculcating the absolute foreordination of human acts, the passivity of the soul in regeneration, and the total moral inability of the sinner in all gracious works. After Arnold Geulinx, as the Calvinistic expounder of Descartes, by his theory of occasional causes, had reduced the soul to a mere pre-determined automaton, and after Jonathan Edwards, as the Calvinistic critic of Collins, had effaced the last vestiges of its self-determining will, it only remained for a school of American Calvinists to push such necessitarian doctrines to their logical extreme. Dr. Nathaniel Emmons, as if to blend and intensify the views of Geulinx and Edwards, maintained that the Spirit of God, so far from implanting any new principle, faculty or disposition in the soul, directly creates or produces the entire series of voluntary acts and holy exercises manifested in its regeneration, conversion and sanctification. Dr. John Smalley, of the same school, with his subtle distinction between natural and moral ability, ingeniously argued that, though man is naturally qualified to obey the will of God, yet he is morally so indisposed as to be wholly unable to think and do right, and that this indisposition is his worst, most inexcusable sin. Dr. Robert Sandeman, with fearless consistency, then proceeded to the legitimate conclusion that all the acts of unregenerate men are an abomination to God, and that the very exhortation to faith and repentance in their case must be unwarranted and of no avail. And ever since, as the fruit of such teachings, there have been pious souls tormented with the dread that after their purest and best

efforts, they were but reprobate and unpardonable sinners for whom it was vain to pray.

And now, scarcely have these traditional controversies of theologians begun to wane, when we behold the same perennial battle renewed where it has ever originated, on the scientific field between new psychological parties. While Dr. Maudsley, in his treatise on "Responsibility in Mental Disease," is rhetorically enforcing necessitarianism with apt Scripture texts and allusions, and Professor Huxley is ironically supporting his human automatism with the orthodoxy of Jonathan Edwards, we find Dr. Elam, with his "Winds of Doctrine," assailing such opinions as mere materialistic fatalism, and Dr. Carpenter, in his "Mental Physiology," denying that the self-determining will can be merged in mere physical causation, that uniform laws can absolve from responsibility, and the moral emotions be measured with muscular forces or molecular movements. And it will be strange indeed, if the clerical spectators who are watching this professional duel, shall not soon take sides and begin to proclaim some fresh Arminian or Calvinistic triumph.

At the same time, the corresponding ethical schools of utilitarianism and asceticism are still contending as of yore for a scriptural foothold. The whole doctrine of human duty and character must ever be pre-determined by psychological views of the moral faculty or quality, and though such views may exist independently of revelation, yet as a historical fact, they have largely had their root or their flower in the ethics of the Bible. And especially since the Greek and Roman and Gothic virtues became blended with the Christian, have attempts been made not only by the fathers, schoolmen and reformers, but also later divines, such as Mosheim, Butler, and Edwards to connect their different moral systems with the Scriptures. On the one side, the Christian asceticism which would make virtue or holiness the sole good, as variously explained by More, Cudworth and Clarke, by Schleiermacher, De Wette and Rothe, has been renewed by Archibald Alexander, Wayland and Haven. On the other side, the Christian utilitarianism which would make happiness or blessedness the sole good, as advocated in different forms by

Malebranche, Steinbart, Paley and Edwards, has reappeared in the moral theology of Hopkins, Taylor and Finney. And while later biblical moralists, such as Martensen, Wutke and Gregory have been endeavoring to reconstruct the whole system of Christian ethics on a scriptural basis, the purely scientific moralists, such as Grote, Sedgwick and Sully, are exploring anew the psychological foundations of all ethical action. Indeed, it would seem that those foundations themselves are to be uptorn and rebuilt from new as well as old materials. In a "Modern Symposium" reported by the Nineteenth Century Review, it has been openly discussed by Sir James Stephen, Dr. Martineau and Professors Harrison and Clifford on the affirmative, and by Lord Selborne, the Duke of Argyll and Dean Stanley on the negative, Whether morality can flourish independently of religion and the Christian virtues remain after a decline of the Christian Faith. It is but the old question of faith and works, returning under a scientific guise; and we may expect to see the controversy extending from the outposts to the very citadel of Christian ethics. If on the one side some new disciples of Cudworth are ready to declare that they would rather be condemned to the place of the lost than admit that the mere will of God must be essentially right and the ground of all moral obligation, we need not wonder to hear from the other side some new Hopkinsian advocate of disinterested benevolence, declaring it the height of Christian virtue to be willing to suffer eternal perdition for the glory of God.

But the destiny of the soul, even more than its origin and conduct, still engages the devout fancy of speculative divines. The dogmas of immortality, the intermediate state, and the final resurrection are maintained with new scientific as well as scriptural arguments, and as philosophical tenets no less than revealed truths. On the one side stands the school of spiritualistic immortalism as the ancient fortress of orthodoxy. Henry More and Norris, Bates and Baxter, Whitby, Stillingfleet and Sherlock, Clarke and Butler, have modern successors in maintaining the immediate survival of the soul after death, as a separate spiritual substance, indissoluble and immortal, conscious and active, entranced in beatific vision or writhing in

remorseful torment. Wolf and Meier and Crusius, are followed by living divines in associating the same doctrine with the Leibnitzian definition of the soul as a spiritual monad, simple, indestructible, and godlike, and in defending it with moral proofs from the divine attributes and the analogy of nature. Devout scientists, such as Wagner, in his treatise on the "Future Condition of Souls," and Tait and Balfour, with their doctrine of the Invisible Universe, are seeking to identify the substance of the soul with the all-pervading ether as the true basis and guarantee of its spirituality, immortality, and participation in things unseen and eternal. Leading dogmatists also have been reconstructing or reaffirming their several eschatologies in the light of the most recent mental and moral science. Dr. Hodge has maintained that the full perfection of the soul in holiness at death, and its immediate entrance into a glory to be completed in the resurrection, are required by the doctrines of probation, justification and redemption as well as by the implicit psychology of the Scriptures, which assume the independent subsistence, consciousness and activity of the disembodied spirit. Dr. James Alexander, in his Consolatory Discourses, has carefully distinguished the scriptural sleep of the dead from the classic conceit of an oblivious slumber, by maintaining the ceaseless activity, elasticity and independence of the mind, and by showing that death, like sleep, is but a detaching of the soul from the bonds of sense, and a resting from the cares and labors of life, during the night of the grave, until the morning of the resurrection, with still conscious peace and joy. And it might be added, that in that ecstatic slumber of the saints, their spiritual powers may be only liberated and expanded (even as fancy is often busiest in the natural sleep), but under such rational and moral control that, instead of evolving "the stuff that dreams are made of," their ideas ever correspond to pure realities, their images are of things unseen and eternal, and their trance is the beatific vision of heavenly glories. Many practical and consolatory writers, such as Lange, in his "Land of Glory," Harbaugh, in his works on the "Sainted Dead," the "Heavenly Recognition," the "Heavenly Home," and Macdonald, in his treatise entitled "My Father's House," have

been illustrating anew the traditional popular doctrine in the blended light of astronomy and psychology and with all the aids of history and literature.

A few Anglican divines, belonging to the conservative school, have been inclined to admit, on ethical as well as scriptural and ecclesiastical grounds, that the righteous may still improve in holiness after death, and the wicked find fresh probation in the middle state before the final judgment. Dr. Pusey, in an Earnest Remonstrance against the Roman invention of purgatory, argues that the primitive custom of praying for apostles, martyrs, and sainted friends, if now intelligently practised, would not imply any unrest or suffering in their present condition, but only the augmentation and final consummation of their bliss, both in body and soul, at the general resurrection in the last day. Keble, in one of his poems, beautifully describes his sainted mother as receiving new joy from the knowledge of his growth in piety, but somehow spared the sight of his wretchedness in times of passion and sin:

> "Thou turnest not thine eyes below,
> Or clouds of glory beam between,
> Lest earthly pangs of fear or woe
> Upon an angel's brow be seen."

But Cardinal Wiseman, in his Lecture on Purgatory, softening somewhat the rigors of the mediæval dogma, maintains from tradition rather than Scripture, that souls who die in unforgiven sin must be purged and prepared for the divine glory through the pains of the separate state and at length saved as by fire in consequence of the prayers, alms, penances and masses of the faithful on earth, while eminent saints and sinners will immediately enter heaven and hell without waiting for the final judgment. The great epics of Dante and Milton, based upon the extremes of Catholic and Protestant doctrine, have been worthily supplemented in our own day by the Rev. W. W. Lord, whose poem, the "Christ in Hades," represents the intermediate teaching of the primitive church and the early English divines, and depicts the under-world of Paradise with a sustained grandeur of conception and style.

At the same time, speculative divines of the German ideal-

istic school, such as Gösche and Weisse, sublimating the whole Christian doctrine of the future state into vague esoteric abstractions, would consign the wicked mass literally to everlasting death as mere refuse of the Absolute Reason, while a privileged few may attain to eternal life through their participation in the development of the divine consciousness and in the immortality of the human race. Against such vague and unsweet faith, Tennyson would seem to have uttered the protest of all united souls, who seek

> "Upon the last and sharpest height,
> Before the spirits fade away,
> Some landing-place, to clasp and say:
> 'Farewell! we lose ourselves in light!'"

On the other side, however, still stands the school of materialistic mortalism, sending occasional recruits from the very camp of heterodoxy. The controversy waged in all ages of the Church, whether the immortality of the soul can be fully proved without the aid of revelation, has now and then driven eccentric divines to the extreme of denying that it is in the Bible at all, and displacing it as a mere Platonic tradition with some psychological doctrine, long since classed among the paradoxes of a devout fancy. At first they distinguished between the mere unconsciousness and the absolute extinction of the soul. The psycho-pannychists of the Reformation, as we have seen, simply recoiled from the purgatory and paradise of Romanism toward the opposite view of an unconscious slumber of the disembodied spirit during the intermediate state. Luther, though certainly not a materialist, was inclined to believe that the souls of the just sleep till the day of judgment, as he declared of the Elector who had died on returning from a chase, that in the resurrection it would seem to him as if he had just come from the forests where he had been hunting, and that the heavenly recognition of the saints would be like that of Adam and Eve on his awaking from the trance during which she had been formed from his side. Tyndal, the martyred translator of the Bible, in controverting papal error, used some expressions which imply the insensibility as well as disembodied state of departed souls, but confessed his entire ignorance of their condition, and

emphasized the resurrection and second coming of Christ as more important and hourly impending events. Socinus held that the separate soul was rapt in mere contemplative self-consciousness, without any sensation or perception of external reality. Archbishop Whateley, in his "Revelations of the Future State," after balancing the arguments on both sides, favored the notion of an unconscious interval between death and resurrection as more in accordance with the Scriptural analogy of sleep, and practically ensuring an instantaneous entrance into heaven. Bishop Butler has suggested that such a temporary suspension of reason, memory and affection, as we know from sleep or a swoon, would not involve their destruction. And Tennyson has also sought for the consolation of future recognition in the same conjecture:

> "If Sleep and Death be truly one,
> And every spirit's folded bloom
> Through all its intervital gloom
> In some long trance should slumber on;
>
> Unconscious of the sliding hour,
> Bare of the body, might it last,
> And silent traces of the past
> Be all the color of the flower.
>
> And love would last as pure and whole
> As when he loved me here in time,
> And at the spiritual prime
> Rewaken with the dawning soul."

It was beautifully said by Chrysostom that the early Christians called the place of burial a cemetery or dormitory, to teach us that departed souls are not dead, but have only lain down to sleep. And Bryant, in his Thanatopsis, has likened the dying saint to one

> "Who wraps the drapery of his couch
> About him, and lies down to pleasant dreams."

But a few extreme divines, abandoning Plato for Aristotle, and connecting materialistic arguments with unusual interpretations of Scripture, have gone the length of denying the existence as well as the consciousness of the disembodied soul, on the ground that the spirit dies with the body, of which it is but a function, through which alone it can be exercised, and with which therefore it must be revived in the final resurrec-

tion. The classic myth of Endymion, who for craving the boon of immortality was condemned to perpetual slumber in the cave of oblivion on Mt. Latmus, has been renewed in a Christian form, and the sleep of the sainted dead converted into a dreamless stupor not distinguishable from annihilation. M. Charles de Rémusat, in his history of philosophy, has recalled various forgotten writers of the seventeenth century, who endeavored to prove that the whole man is mortal, that the true immortality begins at the resurrection, and that there is no intermediate paradise or purgatory, heaven or hell, before the final judgment. Some English divines of the last century joined the materialists, Coward, Layton and Collins, in maintaining the natural mortality of the soul as a positive tenet of Scripture no less than a truth of psychology. Dr. Henry Dodwell, a non-juring churchman deprived of his chair at Oxford, published several works in which he labored with great learning and ingenuity to prove from the Holy Scriptures and the early fathers, that the soul is a principle naturally mortal, but immortalized actually by the pleasure of God, to punishment or to reward, through its union with the divine Spirit in baptism, and that none have the power of giving this immortality since the Apostles but only the Bishops. Joseph Pitts defended the position of Dodwell in various treatises, maintaining that immortality is not a natural ingredient of spirit, that it is preternatural to human souls and a divine gift of the Holy Ghost, secured by Christ, who hath abolished death and brought life and immortality to light. At a later period Priestly, in his "Disquisitions on Matter and Spirit," not only held the sleep of the whole man till the resurrection to be the genuine Christian doctrine, but argued that it made the soul as much dead as the body, and was only another and softer name for the same thing. While such writers have associated mortalism with Unitarianism and Episcopacy, it has been reserved for the Rev. John Miller to revive the same opinion in an able treatise, at the chief seat of Presbyterian orthodoxy. Even the Aristotelian notion of the Italian materialists would seem to have re-appeared in some recent German divines, who hold that the individual soul, being inseparable from the bodily organization, must vanish into the

universal soul, during the time between death and the resurrection, the dust returning to the earth as it was and the spirit unto God who gave it. It will only repeat the cycle of former errors if Feuerbach and Büchner should yet be made to interpret David and St. Paul. Solomon in some of his ironical passages might easily be cited as an Epicurean. Already Lucretius and Seneca have appeared among the comforters of Job, preaching a stoical faith which would bid the mourner bury his heart in the grave at which he weeps. And our whole elegiac literature abounds in Pagan emblems which would change the euthanasia of the saint into a Lethean slumber, and make the Christian cemetery a literal dormitory of the soul as well as the body.

While mortalists and immortalists differ thus widely in regard to the intermediate state, many of both schools are practically united in their views of the resurrection, as a biblical doctrine susceptible of scientific support and illustration. It is maintained that the notions of a bodily restoration among the Hindoos, the Egyptians and the Persians, are traditions of a revealed truth which is prefigured in the Old Testament and completed in the New, and which meets a universal presentiment expressed in the sepulchral rites and emblems and monuments of all nations. And attempts are made to render it conceivable and probable in the blended light of physiology and psychology. Some writers, anticipating a resurrection at the moment of death, seek a basis for it in the present constitution. Swedenborg in his Celestial Arcana, Bonnet in his Palingenesia, and George Bush in his Anastasis, have maintained that there is a spiritual body ensheathed in the present material body, and liberated in the very process of dissolution with an unbroken continuity of life, but with a new organization resembling the old, or as unlike as the butterfly is unlike the worm. Isaac Taylor, in his Physical Theory of Another Life, pursuing some conjectures of Butler, has ingeniously argued that in man as the chief terrestrial animal may be discerned the prophetic instincts and latent types of an expected metamorphosis as plainly as in the structure and habits of an insect preparing to pass into the chrysalis state; that at death by a transition as natural as birth his rational and moral

consciousness will at once expand into a new, refined corporeity, affording larger scope for those intense emotions which are now repressed by the limited capacity of the nervous system; and that at length he will obtain that full measure of physical energy and expression which will enable him to sustain the otherwise overpowering impressions of the beatific vision. Julius Müller holds that, though the spirit lives, its organizing principle remains dormant between death and resurrection, until it shall be clothed with its house from heaven. But Lange, in his "Doctrine of the Last Things," would seem to advocate a sort of continuous or successive incarnation of the soul by virtue of a plastic or formative force which impels it to incorporate itself suitably in all circumstances, as a seed assimilates and vitalizes surrounding matter, enabling it at birth to fashion for itself the present organism, then after death to assume some more ethereal vehicle, and at length, in the great palingenesia, to clothe itself in the most glorious form which the universe can afford, some refined radiant structure, which shall be freed from all earthly vileness, and in which the righteous shall shine as the stars forever.

The most varied conjectures have also prevailed as to the sameness of the future with the present body. The older and more general opinion is, that the whole or a part of the very same matter or substance will be revived. The fathers seem to have looked for a literal resuscitation of the entire body with all its bones, flesh and blood, as deposited in the grave. The schoolmen, with more moderation, taught that only the body in the maturity of its vigor and beauty will be raised. The rabbins fancied a rudiment of the resurrection at the extremity of what is known to anatomists as the sacred bone, and its contact in the grave with some portion of the holy soil of Palestine is still supposed to be necessary to secure its future germination and prevent a subterranean migration to the Holy Land. The Rev. Samuel Drew, in his treatise on the identity of the resurrection body, has revived this conceit in a more refined form by maintaining that there is in every human organism an indestructible germ which, as the flower from the seed, shall ripen thousands of years after it has been sown in the ground. Bishop Butler has hinted

that from all we know of the present body and of the ultimate constitution of matter, the merest infinitesimal atom might afford the sufficient nucleus of a new organization. But the popular conception of the general resurrection is probably that depicted by the poet Young:

> "Now charnels rattle; scattered limbs and all
> The various bones, obsequious to the call,
> Self-moved advance,—the neck perhaps to meet
> The distant head; the distant head, the feet."

Another opinion is, that the organization only may be the same, even though the substance or matter should be wholly different. It has been shown by psychologists and physiologists that personal identity is maintained in the present body whilst its existing particles are constantly replaced by other particles every seven, ten, or twenty years. President Hitchcock therefore suggests that it is not necessary to assume a single restored particle in the resurrection body, but only similar particles united, so as to assume the same structure and form. And if the soul itself, as many have fancied, be endowed with plastic as well as percipient powers, by which it unconsciously moulds and sustains the whole organism, then it may hereafter, at the signal of the resurrection, appropriate and vitalize entirely new matter in a body exactly like that which it long ago shed and lost in the grave. But still another and yet more subtle opinion is, that the identity may be neither substantial, nor organic, but simply ideal, like that which belongs to a work of art. The Apollo Belvidere would be in this sense the same, though wrought in other marble. The rainbow is the same in the driving shower. And the identification of the human body is secured simply through its expression of the same character, so that shrewd observers can discern not merely personal and family traits, but national and even provincial ideas. We assure ourselves of the individuality which it reveals without any recondite regard to its material particles or its mode of organic life. The poet Shelley thus depicts the soul of sleeping Ianthe as it stood,

> All beautiful in naked purity,
> The perfect semblance of its bodily frame,
> Instinct with inexpressible beauty and grace;

while the body lay upon the couch, with the animal life perfect, and every organ performing its natural functions. Dr. Hodge has suggested that if the soul now have so much power to illuminate and render intelligible the gross material of the body, it may hereafter make its ethereal vestment so expressive of itself, that we shall at once recognize Isaiah, Paul and John. And if the conjecture of Lange be added, it might still retain its identity, though it were endowed with an unlimited capacity for organizing and expressing itself in material forms, and should acquire other physical perceptions and powers, as unlike those of this vile body, this muddy vesture of decay, as is the beautiful insect unlike the unsightly chrysalis out of which it struggled up into a new sphere, with new organs and a new life.

The psychical miracles of Scripture have also been subjected to the same eclectic treatment. It has been claimed that the gifts of inspiration, of prophecy, and of tongues were genuine manifestations of the Holy Spirit, which have recurred in the Church at different times, as lately among the Irvingites, and may even be corroborated by analogous phenomena of Satanic origin in the secular sphere. Volumes have been written to prove that the demoniacs in the Gospels were not only genuine possessions of evil spirits, but have ever since been paralleled by cases of witchcraft and sorcery, requiring forms of exorcism and torture. Dr. Carpenter, in a recent review of mesmerism, clairvoyance, spirit-rapping, etc., has incisively remarked that we are now asked to believe greater psychical miracles in the name of science, than have hitherto been claimed in the name of religion. Isaac Taylor has profoundly hinted that frequent communion with departed spirits may be hindered not only by their lack of our modes of communication, but by our inadequate nervous capacity to long sustain their spiritual influences and impressions. And in spite of all the superstitious angel-worship of past ages and the vulgar necromancy of the present day, there are those who can still believe with St. Paul in a permitted ministry of angels and sainted friends.

Eclecticism in Sociology.

The scientific sociology may be said to have been hitherto held by a religious eclecticism with almost undisputed sway. Political economy, civil government, and philosophical history, until fully matured, were simply treated as ecclesiastical topics. And ever since they became independent, devout statesmen, as well as intelligent churchmen, have continued to find their respective systems of polity precisely delineated in Holy Scripture as at once the models of divine wisdom and the ideals of social science. A papal, prelatical, or presbyterial theocracy has been discerned by Bellarmin, Laud and Calderwood, in the Jewish and Christian Church; an absolute monarchy, by Bossuet and Filmer, in the anointed kings of Judah, from David to the Messiah; a legitimate aristocracy by Southern divines, in the patriarchal institution of domestic slavery; and a foreordained democracy, by Northern preachers, in the exodus of the pilgrim fathers from European bondage, the expulsion of the Canaanitish aborigines, and the establishment of the thirteen colonies, like the ancient tribes of Israel, under a model government, with a mighty and outstretched arm in the view of all nations. And at the same time, Christian economists and philanthropists, such as Grotius and Malthus, have been seeking proofs of the divine wisdom and goodness in a supposed natural constitution of society which would simply perpetuate war, caste, poverty, ignorance and crime, as chronic and remediless evils of human nature.

The true theistic argument of the social sciences is beginning to embrace as its field the whole history as well as organism of humanity. The way may be said to have been opened by such historians as Bossuet and Prideaux, who have discerned a universal Providence of mingled justice and mercy in the fortunes of nations as well as individuals, and by such political dreamers as Thomas More and Campanella, who have projected ideal commonwealths which would realize the Communism of the Apostles and the predicted kingdom of the Messiah. Butler, in his chapter on the Moral Government of God, has traced its deep and broad foundations in the natural rewards of prudence and rashness, of beneficial and

mischievous actions, and of virtue and vice as such, as well as in the inherent tendency of the virtuous class to predominate over the vicious in an ideal society which may exist elsewhere in the universe, which was actually promised to the Jew and the Christian, and is yet to be fully realized in the progress of mankind. Chalmers, in his Bridgewater Treatise, has continued the argument of Butler, by explaining the social affections which secure the civil, political and economic well-being, such as the ties of kindred, friendship and patriotism, the rights of property, the humane instincts of charity and philanthropy, and by recounting the public blessings which ever attend the prevalence of virtue, and if fully developed would convert the world into an elysium. President McCosh, in his "Method of the Divine Government, Physical and Moral," a work worthy to be classed with the former, has proceeded to illustrate the divine holiness and justice as well as wisdom and goodness, the moral no less than the natural attributes, in the laws and penalties of Providence, in the crimes and miseries of humanity, and in the vindication of the former and restoration of the latter through the revealed scheme of redemption. It was one of the prescient hints of Bishop Butler that the whole historical evolution of the Christian system from the beginning of the world has proceeded under general laws in analogy with the secular processes of nature; and a new class of theistic proofs may yet be gathered, as we see the mineral, vegetal and animal economies of divine wisdom and goodness through the geological ages gradually surmounted through the four great historical eras, from the Fall to the Flood, to the Incarnation, to the Second Advent, by successive spiritual economies of divine justice, forbearance, mercy and love, in one vast scheme of social as well as individual regeneration.

The more speculative realms of the science have been likewise claimed as by right of discovery rather than of conquest. Each of the rival opinions as to the origin and destiny of society has been made to do religious homage and service. On the one side the strictest legitimism has been retained by such faithful adherents of the papacy as Father Newman and Cardinal Manning, who maintain the temporal independence or supremacy of the Roman Pontiff as essential to his spiritual pre-

rogatives, and accept his decrees as but the historical and logical outgrowth of an infallible hierarchy; by such zealous churchmen as Palmer and Dr. Samuel Miller, who have held the divine right of bishops or of presbyters to be in accordance with apostolic teaching and example, as well as with the principles of Christian society; and by loyal followers of exiled monarchs, who imagine them sovereigns by the grace of God and the will of the people, no less than guarantees of order and virtue.

The exclusively Providential view of the whole human development has been carried to a climax by the Rev. James Smith in a "Divine Drama of History," of which the classical five-fold play is to be taken as the analogue, and for which physical geography furnishes the stage and scenery, chronology the successive acts, and nations and civilizations the performing personages, while the vast plot of the world's redemption is being unfolded. The Chevalier Bunsen has more philosophically, if not pantheistically, advocated the same conception in his treatise "God in History," by tracing the religious consciousness of mankind through the Hebrew, Greek, and Germanic epochs of religion, science and speculation, according to the law of divine self-manifestation in humanity.

The doctrine of supernatural economies in universal history also has been advocated by the Italian statesman, Cæsar Balbo, who held that mankind after showing a progressive degeneration before the advent of Christ, has since shown a progressive amelioration through the influence of the Roman Church; by the German philosopher, Schlegel, who sought to trace a gradual restoration of the divine image in the race as well as in the individual, by means of the Jewish and Christian dispensations; and by the Spanish theologian, Balmez, who, in opposition to Guizot, aimed to vindicate the highest European civilization as but the legitimate fruit of Catholicity. And the natural corruptibility of society has been assumed by the reactionary school of De Bonald and De Maistre, who taught a uniform decadence of all nations with all their interests, as illustrated by the French revolution; whilst the Italian philosopher Rosmini, argued that social

masses everywhere tend to a progressive corruption, which can only be repaired by barbaric new blood or arrested by favored individuals, such as the Roman Cæsars, or by intellectual and religious castes, such as the Indian Brahmins, the Chinese mandarins, and pre-eminently, the Catholic clergy. At the same time, the extreme millennarians have simply abandoned all civilization to a coming destruction in hope of the miraculous return and reign of Christ as King of the nations.

On the other side, the revolutionary principles of the Reformation have been re-affirmed by such enlightened churchmen and statesmen as Döllinger and Gladstone, who resist the political and religious supremacy of the Roman Pontiff as inconsistent both with the civil and with the ecclesiastical polity; by dissenting divines, who have denounced the claims of prelacy or presbytery as not less repugnant to Christian than to natural society, and at variance with the primitive Church as well as with the modern State; and by devout patriots who have argued that resistance to tyrants is obedience to God. The theory of human progression has been based upon scriptural as well as scientific principles by the French publicist Buchez, who seeks to unfold the successive economies of the Old and New Testament in accordance with logical and social laws; by the Scottish divine, Patrick Dove, who maintains that the predicted triumph of virtue and religion is involved in the natural progress of the moral sciences; and by the German philosopher Lotze, who enunciates the laws of the whole social development as proceeding in accordance with the divine sovereignty and human freedom. And the perfectibility of Christian society has been assumed by the advanced school of Coleridge, Arnold, Sewall and Rothe, who have looked forward to the ultimate fusion of Church and State in a perfected republic of piety and virtue; whilst the numerous sects of Christian socialists, in the heart of modern civilization, have dreamed of restoring the communism of the disciples at Pentecost.

The great miracles wrought in the social sphere through all the biblical history, have also been scientifically defended and verified. That good and evil angels have mingled in human

affairs is claimed by such writers as Chalmers, Isaac Taylor, and Kurtz as a supernatural fact which may be discerned in the whole career of humanity, the very aspects of civilization and the prospects of Christianity. It is argued that the first temptation by Satan in Paradise and the subsequent struggle between the seed of the serpent and the seed of the woman, have left their traces in all ancient and modern heathenism, whose startling resemblances to Judaism and Christianity are but infernal caricatures and diabolical perversions of the religious instincts of a fallen race, and whose abominable idolatries and cruelties form the fit rites of the prince of the powers of darkness. The temptation of Christ and the numerous cases of demoniacal possession at the time of His mission, marked that crisis in the great struggle when Satan mustered his legions as if for a desperate encounter. And the moral conflicts that followed between Christianity and Paganism were but the continued warfare of the children of light with the rulers of the darkness of this world. The holy angels, meanwhile, have ever been desiring to look into the mysteries of human redemption, welcoming each new-born soul as one of its trophies, and may still be fancied as the majestic spectators of a great historical drama arranged from the beginning of creation, to the intent that now unto principalities in heavenly places might be made known by the Church the manifold wisdom of God. And if to such consistent revelations be added a recent psychical conjecture, that the planet as it grows from its geological through its historic eras, becomes insphered and haloed with etherealized souls, the good and great of all time, whose blood and thought yet live on in ours;

> "The dead, but sceptr'd sovereigns of the world,
> Whose spirits still rule us from their urns;"

these, too, may be added to the ranks of solemn lookers-on, that increase from age to age as man increases in knowledge, virtue and power, until at length the earth will but ripen into its full miraculous bloom in the heavens, when the Son of Man shall come again with the glory of the Father and the holy angels.

Eclecticism in Theology.

The scientific theology has also long been claimed by the religious eclectic as his own original domain. From the beginning, since the time of Justin Martyr, the natural theism and ethics found in Greek and Roman philosophy and the semblances of Scripture doctrine discerned in ancient and modern mythology, have ever been held to be the mere relics or germs or imitations of Christianity, and are still so treated by Hardwicke, Lücke and Moffat. The natural religion reasoned out by the deist and the physical theology unfolded by the theist have been steadily incorporated in the systems of apologists as foundations of the Christian faith, by Tulloch, Peabody, Wharton, Chadbourne, Thompson, Pirie, Macmillan, Lord. The metaphysical theology of the schools, with its ontological, cosmological, and psychological proofs of a God have been included among the armaments that begirt the citadel of revealed truth, by such writers as Buchanan, Hickok, Mahan. Even the new comparative theology or science of religions which at first appeared with an offensive bearing has been converted into a defensive argument by a historical school of divines who maintain there is a special revelation for Christianity in distinction from one that is universal in other religions. All that is established and accepted in each department of the purely scientific theology has thus been captured and held for the benefit and glory of the Christian religion.

At the same time, the different hypotheses as to the origin, development and destiny of religion as a universal phenomenon of human nature, have been pressed into more or less close connection with the history of Christianity. Professor George B. Fisher, in his able and learned "Essays on the Supernatural Origin of Christianity," has maintained that the mythical theory of Strauss and Baur is incompatible with the veracity of Christ and the Apostles, with the canonical authority of the Scriptures, with the known character of the time in which they appeared, with the nature of the mythopœic faculty as shown in contemporaneous antiquity, and with all the historical evidence which has been accumulating around the literal truth of the evangelical narrative. On the other side, the author of the

recent work on "Supernatural Religion" has been simply renewing the destructive methods of the German criticism in regard to the genuineness and canonicity of the gospels. The Rev. John P. Lundy, in his elaborate and elegant treatise on "Monumental Christianity" by an interpretation of the artistic symbols of all religions, has traced their unity to a primitive revelation, perverted in Paganism, developed in Judaism, and matured in the articles of the Apostles' Creed, which he finds successively displayed in the paintings, sculptures, tombs, personal ornaments, and other monuments of the Christian Church. On the other side, Lord Amberley, in his "Analysis of Religious Belief," has discerned in all religions, as their most essential truth and principle of unity, the universal recognition of some mysterious unknown Cause or Power in the universe which they have variously symbolized and personified. President Woolsey, in his "Religion of the Future," has vindicated the supremacy of Christianity and its capacity to survive and finally triumph over all other religions. On the other side, Mr. Samuel Johnson, in his recent work on "Universal Religion," is arguing for a gradual coalescence and subsidence of Christianity with Heathenism in some future catholic faith of humanity. Each of the hypotheses which we have described is every day marshalling new followers, who advocate from different points a fusion between Christianity and other religions.

And finally, the whole speculative theology or scientific cosmology has been seized and wrought into the very bastions of the citadel of revealed religion. Both phases of metaphysical thought concerning the origin, development and destiny of the world, have been blended with the theism of Scripture. Monism, as a sort of Christian pantheism, has a representative in Mr. J. Allanson Picton, whose "Mystery of Matter" represents the universe as a phenomenal manifestation of the Infinite Life or Energy with which the essential God of the Christian is substantially identical. Dualism is still represented by Prof. B. F. Cocker, in whose "Theistic Conception of the World" the Absolute First Cause is neither the original matter of Büchner, nor the persistent force of Spencer, nor the absolute thought or reason of Hegel, but an unconditioned Will

or living Person, from whom, to whom, and in whom are all things. Professor Martineau, in spite of the charge of anthropomorphism, has eloquently shown, in his essays on "Religion and Materialism," that the existence of a Universal Will is the ultimate fact of metaphysical speculation reached alike by La Place, Herschel and Shopenhauer; that as La Place could find no God in the heavens with his telescope, and Lawrence no soul in the brain with his scalpel, so Du Bois Reymond would imagine that a Universal Mind must be organized in a monstrous cerebrum or divine brain of the universe; but that Ampère has proved that there are constellations of molecules corresponding to those of worlds, and therefore the ordered heavens may repeat the rhythm of the cerebral particles. Creationism has found advocates in Murphy of Dublin, who seems to have revived the plastic mind of Cudworth under the name of unconscious intelligence and habit in man and nature; Frohschammer of Munich, who has united Cudworth with Hegel by maintaining that the creative energy, the fundamental principle of the cosmic process is not will or reason alone, but imagination as a teleological plastic force regulating the objective development of the absolute; and Kaulich of Prague, in whose system of metaphysics the absolute Creator is made ever immanent in His creation, as seen in the teleological evolution of life and of mind, in the miraculous conception of Christ by parthenogenesis, and in the reunion of nature and spirit by the resurrection as the full realization of the ideal humanity. The strictest evolutionism of Herbert Spencer has found a champion in the Rev. William I. Gill, whose vigorous exposition and defense of that hypothesis against both its advocates and opponents, is designed to clear the way for the theistic theory of the universe which will comprise evolution itself as a vast temple comprises each of its miniature figures. Both pessimism and optimism, according to Dr. Martensen, in his "Christian Ethics," have a foundation in revealed religion; the former, in the doctrine of depravity and lost paradise, and the latter, in that of redemption and paradise regained. Herr Philip Mainländer, in his "Philosophy of Redemption," by completing the system of Kant and Shopenhauer would confirm and reconcile Buddhism and pure Christianity. And Mr.

F. T. Palgrave in a philosophic poem on the "Reign of Law," designed to celebrate the marriage of religious faith with the evolutionism of the day, reaches the optimistic conclusion:

"Then though the sun go up
His beaten azure way,
God may fulfil His thought
And bless His world to-day;
Beside the law of things
The law of mind enthrone,
And for the hope of all
Reveal Himself in One;
Himself the way that leads us thither,
The All-in-All, the Whence and Whither."

The psychical and metaphysical sciences, as thus conquered and fortified by the eclectic spirit, have ever and anon been made illustrious with apologetic sallies and captures, some of which remain as splendid trophies while others may only prove as dangerous as the wooden horse in the siege of Troy.

Eclectic Religious Philosophy.

At length we behold our daring eclectic on the summit of philosophy itself, surveying and claiming the whole domain of the sciences, both rational and revealed, in some bold theory of universal knowledge, like an imperial champion that would fling his challenge in the face of both armies.

The history of modern religious thought is full of attempts to combine reason and revelation, without any adequate philosophical examination of their respective powers and prerogatives, and of pretended harmonies of science and religion, based upon no due inductive investigation of nature, and no true exegetical study of Scripture. It was thus that Jacob Bœhme, the inspired cobler of Goerlitz, in a work on the Birth and Signature of all Being, by an inward divine illumination claimed to have revealed a system of universal science, which was afterwards pursued in England by More and Pordage, in France by Poiret and St. Martin, and in Germany to the time of Schelling. It was thus that Emanuel Swedenborg, founder of the Church of the New Jerusalem, combining rare scientific and religious attainments, gave to the world, with the authority of a seer, his Celestial Arcana and

Apocalypse Unveiled, wherein was opened to view the entire universe, with all its endless degrees and correspondences, from the worm to the archangel, from nothingness to Deity, throughout heaven, earth and hell. It has been thus, in more recent times, that the devout disciples of Kant, Fichte, Schelling and Hegel have been constructing immense systems of physical and metaphysical science, philosophies of nature and of religion, which aim to embrace the entire content of all possible revelation and experience, in advance of any full empirical study either of the word or of the works of God. And it is thus, in our own day, that many eminent Christian thinkers, undaunted by former failures and the jeers of sceptical critics, are still seeking for some exhaustive theory of knowledge, which shall be at once consistent with their faith in Scripture and their reliance upon reason; adventurous visionaries, who have soared away from earth and time and sense as into the very heaven of absolute truth, Icarus-like, only to fall back again dazzled and bewildered with excess of knowledge; passionate wooers of wisdom who, like Ixion, have but embraced a shadow for a goddess, having forgotten that divine philosophy flees from pedantry, irreverence and pride, and is only to be won in the sincere love of truth as truth, and for its own sake.

At the same time, these are not to be classed with such other philosophers as may have failed in their quest simply from not fully mastering the route and method which they have pursued. From both of the two rival schools of thought the forerunners of a sound religious eclecticism may be seen already meeting in the same conclusions. On the one side, idealism has had its Malebranche and Berkeley, dwelling in the vision and among the very thoughts of the revealing God; and still has such enlightened critics as Frazer and Krauth, who can perceive its strength as well as its weakness in its bearing upon the pure spiritualism of Christianity. Transcendentalism has been heralded by Coleridge, Emerson, Ripley, not wanting in the vision and faculty divine, and may also claim such discriminating advocates as Hickok, Seelye and Dabney, who can discern through the empirical veil of sense an infinite Creator with a supernatural revelation.

Absolutism has been projected by such world-seeking explorers as Krause and Frothingham, lost in the shoreless ocean of being and knowing; and can boast of such more cautious thinkers as Ferrier and Calderwood, who make a disclosure of the Infinite Reason to the finite reason at least probable by making it conceivable. And, on the other side realism is represented by such writers as Ulrici, whose profound treatise on "God and Nature" is designed to show that science involves faith as well as religion, and presupposes the idea of a Creator as the rational postulate of all physical knowledge; Murphy, according to whose "Scientific Bases of Faith" a supernatural revelation will be found logically supported by the natural sciences as they are themselves supported by mechanics and mathematics; and Fairbairn, whose recent "Studies in the Philosophy of Religion," involve the conclusion that both Science and Faith, in order to be reconciled, must unite in the mutual recognition of the creation and the Creator as indissoluble and harmonious. And numerous other thinkers, such as Zeising, Frohschammer, Christlieb, Scholten, Naville, Barnard, Washburn, Porter, Henry B. Smith, Bascom, Woodrow, who have either written formal treatises upon the reconciliation of reason and revelation, or shown a philosophical grasp of the problem, and contributed valuable memoirs and essays towards its elucidation.

Meanwhile, too, a large, more practical class of religious eclectics are engaged in the popular effort to reconcile the existing bodies of scientific and biblical knowledge, without much deep inquiry into their fundamental principles. Mr. James Hinton, of London, in an essay on Man, designed for the right interpretation of nature, has taken the practical ground that the union of science and religion is not optional, a thing to be attempted or avoided, but a fact to which we must conform ourselves, since science of itself is religious, and in its own progress affirms the truths of the Christian records. Professor Joseph Le Conte, in his Sunday lectures on "Religion and Science," has clearly exposed the difficulties and misconceptions which now hinder a perfect understanding between the students of Nature and of Scripture,

and gathered scientific proofs and illustrations of the leading truths in natural and revealed theology. Chancellor Winchell, in his "Reconciliation of Religion and Science," recounts the gradual encroachments of exact knowledge upon the realm of faith, but conserves a pure theism as consistent with the most scientific conception of natural law, and from the history and present state of the physical sciences collects evidence of their accordance with the essential meaning of Scripture. Mr. James F. Bixby, in his "Similarities of Physical and Religious Knowledge," without dwelling upon any of their special correspondences in existing interpretations of nature and Scripture, unfolds their general resemblance of methods and results, their identical interests and underlying unities, and recommends the remedy for their antagonism expressed in his motto from Lowell:

> "Science was Faith once; Faith were Science now,
> Would she but lay her bow and arrows by
> And arm her with the weapons of the time."

Dr. Andrew Peabody, in his Ely lectures on "Christianity and Science," by a rich and lucid argument has shown that both rest upon the same foundations of testimony, experiment and intuition. Chancellor Crosby, in his vigorous essay, "The Bible on the side of Science," has maintained that science has ever been fostered and promoted by lovers of the Bible, that the great leaders of science have been believers in the Bible, that the Bible is a scientific book, full of statements anticipatory and confirmatory of the chief discoveries in the different sciences, and that empirical science can only be completed by the truths of revelation. President McCosh, in his Ely lectures on "Christianity and Positivism," has traversed the physical, mental and historical sciences, discussing the various questions of the day, which are emerging in Natural Theology and Christian apologetics. Professor Dawson, in the Morse lectures on the "Bible and Nature," has combined his large scientific knowledge with an anti-evolutionistic interpretation of such Scriptures as touch upon the story of the earth and man. Professor Tayler Lewis, in the Vedder Lectures, at Rutgers College, on "Nature and the Scriptures," has dwelt with unwavering philosophic faith upon the majesty

and glory of God in the Bible as fully solving all the problems which modern science has raised without being able to master. And to these should be added many of the lectures on the Boyle, Bampton and Hulsean foundations, the Burnet essays, the publications of the Christian Evidence Society, the discussions of the Victoria Institute, and all the countless discourses, journals and reviews which have made this whole subject the trite theme of the day.

The eclectic philosophy, which would thus overrun the wide domain of the sciences in search of new proofs and illustrations of the Christian faith, cannot but be useful and encouraging, but is plainly no more conclusive than a brilliant raid through an enemy's country or a display of trophies before the battle is won.

Crude Religious Culture.

At the last, the eclectic spirit may be seen emerging in practical life, with a premature attempt to blend the religious and secular elements in every sphere of civilization, like the transient occupation of conquered provinces by an army which cannot hold the ground which it wins.

The primitive and mediæval forms of Christian culture have thus been advocated and revived in the midst of modern society, with more or less completeness, by different parties in the various churches and denominations. Mr. St. George Mivart, as an advanced Roman Catholic, in his essays on "Contemporary Evolution," has ingeniously argued that the scientific law of development has reached its climax in doctrinal history by the recent decree of papal infallibility; that the social, political, scientific, and æsthetical evolutions which have followed the Reformation are but a reversion to Paganism; and that the existing conflict between the Pagan and Christian elements of culture can only issue in the survival and re-establishment of the mediæval theocracy and philosophy. The æsthetical, doctrinal, and ecclesiastical ritualists of the English Church, as led by Keble, Pusey and Newman, have been urging a similar restoration of primitive Christianity in the realms of art, science, and politics. Principal Tulloch and Professor Shairpe exemplify the re-union of religion and

culture in the Scottish Kirk. The different American churches, though much farther removed from such discussions, are pervaded by philosophical and liturgical tendencies in the same general direction. Dr. Bellows, in his eloquent discourses on the "Suspense of Faith," turns from the distracting anarchy of the present to a glowing future, when literature, art, politics, and religion shall teem with the fruits of a new Christian culture, born of the marriage of European with American influences. While Arthur Hugh Clough would rest content in the classic revival of the last four centuries, and

> "from no building, gay or solemn,
> Can spare the shapely Grecian column;"

James Russell Lowell, in his "Cathedral," depicts the Western Goth, like his Northern ancestor, as but the pioneer of a young and yet more vigorous civilization, in which

> "whatsoe'er
> The form of building or the creed professed,
> The Cross, bold type of shame to homage turned,
> Shall tower as sovereign emblem over all."

Already the religious eclectic is seeking a re-consecration of literature. He would break that false alliance of elegant letters with worldliness, immorality, and irreligion which has been growing for several centuries past, and win back the errant muse of poetry to the sacred haunts of its earlier devotion. According to his special predilections, he prizes Dante, Milton, Herbert, Pollock, Cowper, or Wesley above any of the modern bards who draw inspiration from secular themes. The sacred dramas of Hannah More, the devout verses of Felicia Hemans and Lydia Sigourney, the moral tales of Maria Edgeworth, the religious novels of Elizabeth Sewell and Catharine Sinclair indicate to him the possibilities of a new Christian literature, which shall be made to order, as the reward of blended piety and genius. And forthwith the Sunday-school library becomes stocked with Bible stories and sacred romances, designed to exorcise the heathen mythology of the nursery; the Tract society drives a brisk competition with the cheap novel; the sectarian Publication House embellishes the most polemic orthodoxy with new literary forms; and the religious journal undertakes to sift the wheat from the

chaff of the Satanic press. Or if he have a more philosophical appreciation of the true sources of literary inspiration, he is content to dream of some better time when, as Dr. Peabody has well expressed it, our English literature shall have a renewed Christian baptism, and our poetry a fresh Pentecost from on high.

Already, too, he is aiming at a re-consecration of art. That prodigal child of the Church he would reclaim from its long course of worldly dissipation, and restore the mediæval cathedral, with its cruciform plan, its pictured saints, its sculptured symbols, robed priests, and antiphonal choirs, as the true temple of the Christian muses. He would even celebrate Protestant worship amid the æsthetic appliances of the Catholic ritual, with a pulpit in the Apse, a table for the Altar, a Daily Exhortation long since grown obsolete, a Psalter to be said that ought only to be sung, Calvinistic prayers which were never meant to be intoned, and a Sermon made inarticulate by pillared roofs that were only fitted to gather and roll back the sound of anthems. Should he eschew such relics of popery, then he will borrow any other artistic forms which may be at hand, and straightway he builds a Grecian portico in place of the Gothic spire, surrounds Christian worshippers with Pagan ornaments and emblems, listens to operatic selections instead of joining in familiar hymns, and even in the midst of a revival permits the lay-preacher to ascend the pulpit and exhort to an adjoining confessional, whilst the trills of a solo performer are impressed upon an assembly bowed in silent prayer. Or if he have a more liturgical conception of the just relations of piety and culture, devotion and taste, he seeks a cure for existing evils by reviving a defunct liturgy, or constructing a new order of services, or issuing a manual of forms, or looking beyond such tentative efforts and experiments to the learning, genius, and faith blended in some new Christian art that is yet to be.

In like manner, he would at once Christianize all existing politics. As a faithful Catholic, he would merge the state in the church, and longs for the return of that imperial theocracy which once preserved the balance of power throughout Europe, while it held kings, lords and commons as obedient vassals at

its feet. As a loyal Protestant, he would blend the church with the state, and does not scruple to submit her dogmas to the decisions of courts, to mingle her ritual with public forms, to insert her doctrines in the constitution, and to entrust her whole function of education to the legislature. Or if neither church nor state, as now organized and opposed, can claim his hearty alliance, then he dreams of some new Christian commonwealth, based upon the Scripture ideas of charity, equality and fraternity, and will be heard piping its pastorals amid all the strife of parties and the din of arms. He becomes the philanthropist, who would harmonize the warring nations by means of peace societies, international courts, and world's congresses; or the social reformer who, in this wayward youth of civilization, would inaugurate the mature reign of reason and virtue, as he proceeds to erect, over the very embers of revolution, like villages upon the slope of a volcano, his little sequestered arcadias, phalansteries, communities, which we are invited to admire as actual models of Christian society, and advanced samples of the predicted era of innocence and peace.

And, at the same time, he strives at once to Christianize all existing religion. Viewing heathenism as but a destined province of the papacy, he would heal the divisions of Christendom at the fount of ecclesiastical infallibility, and gather the scattered flock of Christ within the fold of the one chief Shepherd, the Bishop of Rome and successor of St. Peter. Regarding the different religious denominations and churches as more or less analogous and congruous, he would begin the work of fusion and consolidation by combining them externally under Boards of Foreign and Domestic Missions, Bible and Tract Societies, inter-ecclesiastical Conferences, General Church Councils, and Evangelical Alliances. Or should no existing organization meet his ideal of doctrine and polity, then he would fuse all creeds into one, which shall retain only their common truths, and resolve all sects, by himself adding another to the medley. He becomes the religious reformer who at this late day, after eighteen centuries of progress, would proclaim his discovery of the only true Christianity, or the philosophic religionist who would crystalize about the Chris-

tian faith the cognate truths of Judaism, Mohammedanism, Brahminism, Buddhism, Polytheism, together with all the forms of Deism and Pantheism, and gravely invite mankind to flock into his new church of humanity, and proceed to organize the millennium upon his platform.

Thus the impatients on both sides are running into the like absurdity, and would precipitate the same evils. In so far as they prevail, they only fret the cords already strained between religion and science, and threaten to wreck both Christianity and civilization in worse anarchy.

Against such eclecticism it need only be urged, that the existing are not the normal relations of reason and revelation. While in the abstract they are harmonious, yet as at present developed and adjusted, they alike demand of their votaries a spirit of mutual deference and conciliation, and a system of preliminary rules, equally binding upon both, in all their joint researches. Any forced combination of their several products, like that now so frequently attempted, overlooks their present anomalous condition, and is, for several reasons, to be discouraged.

In the first place, it is at best specious and partial. Too often it consists of a mere rude welding of dogmas with hypotheses, devoid of any rational consistence, and leaving out large portions of fact, or mixing them with mere conjecture. No cognitive system can be real and universal which simply accepts or rejects the results of research at the bidding of prejudice, and then works them into a fantastic composition to please a devout or a speculative fancy. Every attempt at a summation of truth which proceeds in the interest of either party, so far from involving a thorough fusion of knowledge with knowledge, can only issue in a crude amalgam of fact and theory, fiction and reality.

In the second place, it is in its mode of action illogical and unscientific. Instead of patiently waiting for a strict induction and full exegesis, it takes the existing imperfect results of both, and blindly, without reference to first principles, proceeds to combine them, forcing nature out of its sphere as a mere witness to Scripture, and Scripture out of its sphere as a mere witness to nature. But so long as a scientific hypothesis

is not verified, or a theological dogma is not demonstrated, the risk must remain, that, in using either for the benefit of the other, we may be only driving truth into alliance with error. The known in both is alone that which can or does become consistent. Only when we have logically adjusted the relations of reason and revelation, and studied all the phenomena in their vital connections, and without either scientific or religious prejudice, will we be able to frame that summative system by means of which we may sift the ascertained from the conjectural, fuse the discovered with the revealed, and so build the temple of knowledge with the lasting cement of truth.

In the third place, it is in its scope narrow and premature. Without projecting any scheme of logical organization throughout the sciences, but simply because their rational and revealed portions here and there are coming into harmony, it goes precipitately to work upon the vast remainder, and would mould it at once into a system. And yet, we are now only in the first stages of the great reconciliation. Fiercer strifes may await us, in the more undeveloped sciences, than any we have survived. If astronomy could make such warfare, at the mere outposts of revelation, when it dwarfed the earth into an atom in space; if geology, at the walls of the fortress, strikes such a panic now that it threatens to reduce man to an ephemeron in time; and if anthropology is actually jarring the foundations with its effort to degrade him to an autochthon in the scale of being; what may we expect, when at length the citadel is assailed by those mental and moral sciences which, having human nature for their subject, and involving all the great questions of human duty and destiny, shall impinge upon the most peculiar topics of inspiration, upon the actual contents as well as credentials of the heavenly message? He would be blind indeed to all the lessons of history, who dreams that science and religion have yet reached the limit either of their opposition or of their contribution to each other; and if we may be cheered by past triumphs, not less should we be warned to prepare for coming conflicts.

In the fourth place, it is in its whole practical aim visionary and vague. Not only does it presume, without any truly rational process, to have reached the final system of know-

ledge, but it hastens to organize it in defiance of the present social state. Whereas, even if it had the true ideal, it is not to be forced upon the world in the way of artificial reform and social reconstruction. Whenever it comes, as it silently pervades the influential mind, it may bring with it an organizing force of its own, which, without visible concert, passing through and beneath all mere institutions, shall slowly dissolve and recompose the whole existing civilization by changing the opinions upon which it is based. For aught we can tell, the present system of church and state, with all its jarring sects and governments, may be left upon the pathway of time as a mere outworn chrysalis, from which society shall have struggled forth into new life and freedom, and the entire political organization of the race, at the time when the nations shall be fused in the truth and tranquillized by love, may have an aspect of patriarchal simplicity, or be moulded into some homogeneous structure of which no type can now be found. But, whatever it may be, we can at least be sure that it is not to be compacted from existing institutions or wrought by immediate efforts. Certainly no sect, political or ecclesiastical, now shows the means of assimilating all the rest as by sheer propagandism or through any plastic force; and no theory of human perfectibility that has yet been broached could, by the mere display of its charms, lull the social tumult to peace.

We must therefore grant that the two interests, as now related, cannot at once be brought into a just, safe and lasting union. By rashly overstepping the limits which still sunder them and illogically proceeding to a forced compact of their several bodies of knowledge, we simply drive them into false relations which must sooner or later dissolve and throw them apart again with harsh recoil and estrangement. Let not science offend the oracle it would consult, by any irreverent spirit; and let not religion repel the intelligence it would claim, by any irrational process; but let each learn the other's virtues and laws and only join hands in the oneness of truth and upon the same footing of mutual faith and love.

CHAPTER V.

MODERN SCEPTICISM BETWEEN SCIENCE AND RELIGION.

THERE is no sadder sight beneath the sun than that of brave men quailing in a good cause. We picture the dismal spectacle after the glory of battle has collapsed in rout and panic; the field of death and carnage, as the sanguinary sunset declines, and the pallid moon lends a sickly horror to the scene; the beaten chieftains wrangling over their defeat, and the fallen leader sitting apart in sullen gloom. We think of how much pride and courage and hope have been precipitated into such chagrin and despair and weakness; and we are almost ready to forget the duty of victory in pity for the vanquished, and to pardon the baseness of surrender as but submission to fate.

In some such mood, Mr. Matthew Arnold, the academic poet of the modern school of ennui, would seem to have expressed the despair of baffled philosophy at finding her perennial problems still unsolved:

> "Achilles ponders in his tent;
> The kings of modern thought are dumb.
> Silent they are, though not content,
> And wait to see the future come.
> They have the grief men had of yore,
> But they contend and cry no more."

And Schleiermacher, gloomily foreboding the present crisis nearly fifty years ago, wrote to his friend Lücke: "I shall not live to see those days, but may lay myself down to my last

sleep in peace. But what do you and your contemporaries intend to do? Will you entrench yourselves behind the outworks and let yourselves be blockaded by science? The bombardment of derision would do you little harm. But the blockade? The starving out by science, which, because you thus entrench yourselves, will be forced by you to raise the standard of unbelief? Is it thus that the knot of history is to be severed, and Christianity to be allied with ignorance, and science with unbelief?"

We have termed this class of religious thinkers the Despondents or Sceptics, because they despair of any reconciliation of the two great interests, and can but lament them as doomed to their present relations. The breaches between Scripture and science they see no way of healing. From the ideal unity of truth they turn away to the actual disorder of knowledge, and wander amid its wilderness as in a maze of contradiction and anomaly; whilst in the practical sphere they are consistently led to disavow all attempts at social amelioration, and to surrender even the hope of human progress. In short, they are the recreants on the field of philosophy who would sheath their swords in mid battle, or snap them asunder in the agony of supposed defeat.

In contrast with the Extremists and the Indifferentists they may readily grant the theoretical importance of the question before us, and in concert with the Eclectics, they may even at times have attempted its logical settlement; but somehow the attempt only issues in failure and discouragement. Owing to a sceptical or unbelieving temperament, or from a love of singularity and fondness for paradox, or from a surfeit of speculation and genuine bewilderment of reason, or in sheer reaction from the very eclecticism that has failed to combine the two sets of truths, they accept them both, only to pronounce them incongruous and irreconcileable. And they may be found either in the ranks of religion or of science.

On the one side, the religious sceptic or desponding religionist will disparage not less revelation than reason. He looks upon both as belonging to an earthly and transitory state, and hereafter to be merged in the rapt intuition and full apocalypse of truth. The one is so meagre and the other so

erring, that he cannot hope they will ever together yield enough of knowledge to displace all ignorance, or indeed do scarcely aught else than show their own necessary imperfection. To combine the mysteries of Nature with those of Scripture, he will maintain, must only breed increased perplexity, and will bewail the present chaos of doctrines and theories as but the inevitable and final state of earthly knowledge. His theology bids adieu to science as a lorn child of earth, and seeks some mystic elysium in the skies.

On the other side, the scientific sceptic or desponding scientist, will disparage not less reason than revelation. In his view they are both occupied with questions which are insoluble, and upon which together they can shed only enough of light to make the darkness visible; the one serving but to show the unrevealed to be unrevealable, and the other, to prove the undiscovered to be undiscoverable. He will even argue that their joint process must have its logical goal in the incomprehensible and unknown, and will cite the meagre conclusions in which they unite as proof that all our knowledge is only a laborious learning of our ignorance. Science is to him but a cruel Sphinx, whose smile only mocks while it charms, and at whose feet even theology must sit in dumb despair.

The traces of such scepticism may be seen in history at every great juncture, when old faiths are decaying and new truths emerging into view, while yet their consistence and harmony are in question. It was somewhat of this spirit, in its scientific form, which pervaded all philosophy amid the declining mythologies of Greece and Rome, as expressed by the cynic, the stoic, and the satirist, and at length unconsciously voiced in the sneer of Pilate to Jesus, "What is truth?" It was somewhat of this spirit, in its religious form, which prompted the rationalizing fathers, such as Philo and Origen, to surrender the obvious sense of Scripture to the demands of Platonism and even to evaporate its essential doctrines into metaphysical abstractions. It was somewhat of this spirit which reappeared in its religious form among the sceptical schoolmen, such as Cusa and Agrippa, in their lamentations upon the uncertainty and vanity of all know-

ledge, both divine and human. It has been this spirit, in both of its forms, which has since animated all Protestant rationalism, widening the chasm between Scripture and science, until it seems impassable. And it is now this spirit which would discourage all attempts to heal the great schism, by recalling the failures of an unwise eclecticism which has rashly essayed the task, and citing the misgivings of veteran divines and disappointed thinkers, who can only view any renewal of the effort with that sad incredulity with which age commiserates the dreams of youth, and experience chills the enthusiasm of innocence.

The history of religious scepticism has been reviewed from various stand-points by such writers as Röhr, Saintes, Hunt, Tulloch, Stephen, Rigg, Mackay, Fisher, Gillett, Frothingham, and its numerous illustrations may be gathered from the special treatises which have hitherto been noticed. All that the present argument requires is the selection of a few examples of such sceptical scientists and religionists as would needlessly surrender important classes of scientific facts, which might be brought into harmony with religion, or essential portions of religious truth, which ought to be kept in harmony with science. And as we proceed, it should be borne in mind that religious scepticism admits of many phases and degrees, from the reluctant doubt of the believer to the ready cavil of the critic, and that the farthest departures from traditional orthodoxy, in a Schleiermacher, a Channing, or a Kingsley need never stint our praise of their true Christian piety and virtue. The typical examples of the sceptical spirit are not the struggling, courageous souls who would rather believe than doubt, and whose very perplexity often comes from an honest effort to conquer their own misgivings or relieve the scruples of other minds; but the more timorous, cynical natures who will have their sneer even at the expense of truth, and neither themselves lay the doubts which they have raised, nor encourage any to attack and overcome them.

We shall meet such sceptics in each of the physical sciences, amid the great battle of infidels and apologists, fleeing from the field of controversy, like fugitives who sound a retreat at the rear, while yet the shouts of victory are ascending at the front.

Scepticism in Astronomy.

The whole biblical astronomy has thus at times been depreciated. From the first, there have been doubts as to its consistency with celestial physics. It was not surprising, surely, that any theistic arguments based upon the old Ptolemaic system should be received with sceptical misgivings. Alphonzo of Castile, the liberal patron of the astronomical tables bearing his name, after vainly trying to comprehend the complex scheme of the seventy-nine crystalline spheres, is said to have impatiently exclaimed that had he been present at the creation he could have suggested a wiser and better plan of the world. Milton thought so little of the pious uses of such a system, that he represents it as only fitted to move the laughter of the angels at the quaint opinions of men:

> "how they will wield
> The mighty frame, how build, unbuild, contrive
> To save appearances; how gird the sphere
> With centric and eccentric scribbled o'er,
> Cycle and epicycle, orb in orb."

Montaigne, the literary sceptic, deprecating the horrible atheism to which the Reformation was tending, doubted whether the theory of Copernicus might not simply follow that of Ptolemy as one philosophical system has ever been superseded by another. Paley himself, though a Copernican, consistently with his utilitarian view of the divine attributes, depreciated somewhat the whole astronomical argument as compared with that afforded by the structure of the human body, which he thought more obviously adapted to our welfare than the solar system. The late Rev. Baden Powell, in his Order of Nature, after restricting the so-called cosmotheology to one or two vague natural attributes, cites English divines with French atheists to prove the futility of identifying the hypothetical First Cause of the heavens with the Jehovah of the Hebrew Scriptures. Mr. Maurice refuses to believe that any modern astronomical ideas could have occurred to the shepherd boy to whom the heavens declared the glory of God and the firmament showed His handiwork. Professor Owen confesses that he does not pretend to know for what

purpose the stars were made any more than the flowers or the crystalline gems or other innumerable beautiful objects. The great astronomer Bessel would dissipate with scientific arguments the conjecture of those feeling hearts who seek for sympathy even in the Moon. And when intelligent Christian thinkers, like Coleridge, Hegel, and Whewell, discourage all attempts to connect the theory of inhabited worlds with the doctrine of the Heavenly Father and the angels, by representing the unnumbered planets, suns, and galaxies as so much gross matter, mere lifeless masses of cinder, slag and vapor, the worthless refuse of reason, and unveil the very heaven of heavens as a godless solitude, it is no wonder that other, differently constituted persons are ready to exclaim, with more meaning than the poet intended:

> "O star-eyed Science! hast thou wandered there
> To waft us but the message of despair?"

Pascal could only find relief from the overwhelming magnificence of the material universe in the thought, that though it were combined to annihilate man, yet man would be greater than it, since he alone knows that he dies. And Daniel Webster was so oppressed by the sense of human insignificance in contrast with the immensity of creation, that he directed it should be inserted in his epitaph as his chief difficulty in accepting the Christian faith.

At the same time, the rationalistic critics of Scripture, from Semler to Baur, have been busy with scientific explanations of the astronomical miracles as mere cosmical phenomena, which were innocently exaggerated and embellished by the mythic fancy of the ancient world, then active among the Jews as well as the Gentiles. The arrest of the sun and moon at the command of Joshua is treated as a bold, rhetorical trope in the narrative, or if an actual occurrence, as an optical illusion such as the mock-moon of the Arctic atmosphere, or a fortunate coincidence of the long summer twilight. The star of the wise men was an artless plagiarism of the star of Balaam, or a comet readily magnified into a divine omen by some pious Jewish merchants, or a horoscope cast by eastern astrologers in the constellation of the Fish for the ascendant house of Judah, or a fortunate conjunction of the planets

Jupiter and Saturn in a new brilliant luminary about the date of the nativity. Even the celestial glory and angelic chorus which surprised the simple shepherds of Galilee is, with Luciferan cunning, depicted as only the glare of passing lanterns borne by chanting worshippers of the expected Messiah. And the last great conflagration itself, with the flaming heavens and falling stars, is regarded as but a symbolic picture after the manner of prophecy, prefiguring the final overthrow of the earthly powers and kingdoms which oppose the advent and reign of Christ.

Scepticism in Geology.

The biblical geology has, in like manner, been largely disparaged. A reaction has followed the extravagant mysticism of devout physicists in the middle ages, such as Albertus and Vincent de Beauvais, who, in their zeal to make science thoroughly Christian, strove to exhibit all nature as full of biblical symbols, allegories, and mementos; and the extreme tendency of many natural theologians to seek divine purposes in the most trivial phenomena has driven some of their critics to treat all the religious lessons of terrestrial physics as the mere conceits of a pious fancy which would absurdly exalt man as the final cause of an infinite universe, and hail as special Providences the chance vicissitudes of the seasons and other incidental beauties and utilities of nature. In place of the pious writings which glowingly depicted the whole earth as full of the divine wisdom and goodness, we now have exact scientific treatises which simply discharge the surrounding creation of all religious significance, leave it as hard and dry as the skeleton mechanism which it hides, and make the more devout student fain to protest with Wordsworth against such arid naturalism as worse than the "fair humanities of old religions:"

> "Great God! I'd rather be
> A pagan suckled in a creed outworn;
> So might I standing on this pleasant lea
> Have glimpses that would make me less forlorn—
> Have sight of Proteus rising from the sea,
> Or hear old Triton blow his wreathed horn."

Some physicists would seem even to take pains to exclude all traces of intelligent order and benevolent design from the scientific view of nature. Professor Rogers assures the American Scientific Association that the mathematical bee of the Bridgewater Essayists no longer builds a perfect geometric cell under the critical eye of the most recent science, as pursued by the late Professor Jeffries Wyman; and suggests that Professor Chauncey Wright was equally fortunate in showing that the orderly arrangement of leaves of plants along their axes was due to circumstances of growth and not a result of blind law. And other objectors, while admitting the symmetry of form and harmony of color which appear in the works of Nature, have denied that such effects could have had any benevolent purpose in the flowers which are born to blush unseen, or the gems which are hidden in the unfathomed depths of ocean.

Biblical students and divines have pronounced the Hebrew cosmogony unscientific, and relinquished the task of harmonizing it with modern geology. Schleiermacher, long before the appearance of the "Essays and Reviews," confessed himself ready to give up the work of the six days, the very idea of creation, and even the whole of the Old Testament in order to save the New. Kalisch, in his commentary, declared the first chapter of Genesis wholly irreconcileable with the accepted results of physical science. Baden Powell terms it a Judaic myth which has died a natural death. Another of the Essayists and Reviewers, Goodwin, maintains on the contrary, that there is nothing poetical or figurative in the whole narrative; that Moses was simply an early speculator, or sort of Hebrew Descartes, who has become obsolete, and that it has pleased Providence to use his human utterance for the education of mankind in the true doctrine of the creation. The more orthodox Mr. Rorison, in replying to Goodwin, admits that it should be read as a Psalm of Creation, and that the conciliatory schemes of Hugh Miller and McCaul are mere make-shifts. Maurice, in his Lectures upon Genesis, exhausts it of all historic reality and resolves it into a sort of philosophic mythus, exhibiting the succession of plants, birds and animals, not as actual phenomena, beheld by Moses,

but as divine ideals rising toward man, the climax of creation. A Layman, writing to Mr. Maurice, on the relative claims of the Bible and Science, expresses his impatience at the attempts to show that the author of the first chapter of Genesis was inspired by a special miracle to use language which should anticipate all the changing phases of human discovery. Mr. Thomas Hughes, in the "Tracts for Priests and People," avers, that he would be none the worse if the Mosaic cosmogony were to disappear to-morrow. And Mr. Orr asserts that Unitarians of the present day do not conceive themselves bound to defend the geology of Moses.

The geological miracles of the Old and New Testament have been stript of their supernatural halo by the German rationalistic exegetes Michaelis, Eichorn, Paulus and Bauer, and reduced to the most ordinary phenomena. According to such critics the Deluge of Noah was but a local freshet, since magnified into a universal judgment. It was simply a volcanic eruption which overwhelmed Sodom and Gomorrah with fire and brimstone, like that which has since destroyed the cities of Herculaneum and Pompeii. The plagues of Egypt, the crossing of the Red Sea, the wanderings in the wilderness, the showers of quails and manna were exceptional, yet natural events, which might have occurred in the history of any nomadic people, but became exaggerated through the national vanity of the Jews into divine interpositions. Korah, Dathan and Abiram were swallowed up by an opportune earthquake or caught in a prepared pit-fall. The legal terrors of Mount Sinai arose from a passing storm of thunder and lightning, which fittingly illuminated the face of the lawgiver in the view of the awe-struck Israelites. And the later physical miracles of Jesus were but feats of magic or extraordinary phenomena, afterwards embellished by the Messianic fancy of His followers. The stilling of the tempest was only a sudden calm on rounding a head-land. The water made wine had occult vinous properties, or may have been simply a private wedding present to surprise the guests. The draught of fishes was due to a passing shoal. The loaves in five baskets were multiplied by magic or only tasted as in a sacrament. The tribute money was simply the proceeds of Peter's fishing. The disciples in

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the midnight storm perceived Jesus but indistinctly as He waded in the shallows or walked upon the shore, to which He easily lifted the too venturesome apostle. The cursed fig-tree was blighted by an oriental sun. Even the awful prodigies of the crucifixion did not exceed those of an ordinary eclipse and earthquake. And the magnificent descriptions of the future destruction and renovation of the material earth were but the glowing language of political prophecy, in reference to the downfall of Jerusalem and other anti-christian powers and kingdoms.

Scepticism in Anthropology.

The biblical anthropology has begun to fall under the same destructive criticism. Since the standard illustrations of the divine benevolence afforded by the animal and human body have been found faulty in some of their details, doubts are thrown upon the whole teleological argument in the name of science. It is objected to such reasoning that all animate nature is full of defective and malevolent contrivance. Cuvier confessed himself doubtful as to the advantageous structure of the sloth which, though a vertebrate animal, is incapable of walking. Buffon declared that he could see no marks of divine wisdom in the hump of the camel. Geoffrey St. Hilaire refused to ascribe good intentions, short methods, and best ends to Nature as an intelligent being, and likened the doctrine of prospective contrivances and compensations in the animal world to the absurdity of supposing that a man with crutches had been predestined to a paralyzed or amputated leg. Professor Helmholtz has said that he would return to any good optician an instrument as imperfect as the human eye. Many naturalists are so impressed by the anatomical likeness of man to the anthropoid apes that they hesitate to class him as a distinct species, made in the divine image, and set over the animal kingdom. And some divines, in their desperate perplexity at such resemblances, have been ready to persuade themselves that the monkey, instead of being an original divine creation, is but a subsequent Satanic caricature of humanity. Paley has admitted that diseased and monstrous organisms, poisonous serpents, and beasts of prey, though

they may suggest an intelligent Creator, can prove nothing as to His wisdom and goodness; and he labors to show how the pain and cruelty which disfigure the animal creation, as well as the evils of sickness, age, and death to which man is subject, are nevertheless alleviated and compensated in the general economy of nature. And Tennyson, after confronting his sceptic with such anomalies, can only make him instinctively protest against them as one

> "Who trusted God was love indeed,
> And love creation's final law,
> Though Nature, red in tooth and claw
> With ravine, shrieked against his creed."

The literal story of the creation and fall of Adam has already been abandoned by many exegetical scholars, and treated as a mere sacred myth or allegory. Philo, Origen, and the Alexandrian Platonists have come again in modern critics, who sacrifice the historical to an infused dogmatic or philosophic sense. According to Eichorn and Paulus its whole design was to paint the loss of the golden age, of which traditions linger among all nations. In the serpent which tempted Eve, Rothe, Steffens, and Martensen have perceived only an emblem or ideal personification of sensual appetite, of pre-existent sinfulness, of the adverse cosmical principle of nature, or a mere rhetorical figure of Satan. The tree of good and evil was a symbol of probation, and by its intoxicating fruit represents the evil effects of pruriency and lust. The more idealizing interpreters, such as Kant, Ammon, and Hegel, denying the doctrine of original sin, can perceive nothing but a poetical description of the advance of man from savage beastliness to rational freedom, at the calamitous cost attending all knowledge. And there are still others, such as Professor Jowett, who, having accepted the new theories of animal and human evolution, are ready to surrender the whole dogmatic as well as historic sense of the narrative, and reduce it to a level with the myths of Prometheus and Pandora.

The anthropological miracles of the Bible, under the same sceptical treatment, have vanished into ordinary ethnical and physical phenomena. According to the naturalistic critics, the tower of Babel, if anything more than an allegorical picture

of the origin of languages and nations, was but the seat of an ancient Gentile empire, out of whose anarchy the Jews had escaped. The counterpart gift of tongues and fusion of peoples at Pentecost had no other foundation than the simultaneous use by the excited apostles of a few neighboring dialects, under flickering lamps, in the midst of a whirlwind. The incarnation of Christ as the Second Adam was a natural birth, subsequently embellished by His enthusiastic followers, after the Jewish hero-type, with visions, trances, voices, and apparitions. A dove passing at the moment of His baptism was accepted as an omen of the Holy Spirit. His numerous miracles of healing, so far as genuine cures, were performed upon nervous patients by a peculiar medical skill like that of clairvoyance and mesmerism. The dead raised to life had been cases of suspended animation or premature interment. A sudden effect of sunrise upon Mount Tabor, as He stood against the sky conversing with two of His apostles, was construed by the drowsy disciples below into His transfiguration. His resurrection was the recovery from a trance through the stimulating effects of the spices, and was necessarily kept secret by a few faithful followers. Even His ascension was only a mysterious disappearance in the sunset-clouds of the mountain-top, suggesting to the beholders the translation of Enoch and Elijah. And His predicted kingdom, with the earth restored to a paradise, and the whole race in a state of peace and innocence, is no more than a consequent prognostic of the Messianic fancy.

The physical sciences, as thus deprived of their biblical portions of truth, would leave us simply an astronomy without a Father in heaven, a geology without a Creator of the earth, and an anthropology without the divine image.

Scepticism in Psychology.

We may also meet groups of the same timid sceptics in each of the psychical sciences, ready to quail at every infidel doubt and yield up every apologetic defence, like traitorous cowards who spike the guns of their fortress on the most distant menace of the enemy.

The biblical psychology had scarcely been constructed

before it was thus surrendered. The theistic proofs of Descartes and Samuel Clarke, claiming external reality for the internal idea of a Perfect Being, were set aside as speculative, vague and unscientific; not more absurd, according to Kant, than if one should fancy he possessed a hundred crowns because he could conceive of them. It was denied that any innate idea of God can be found in untutored savages and unsophisticated children. The traces of divine benevolence in the æsthetic sense of beauty in nature and art have been obscured by resolving that faculty into a mere inheritance of pagan culture, or describing it as a capacity for exquisite pain as well as pleasure. Of the lauded rewards of virtue, Burke declared they were treated like make-weights in scales hung in a shop of horrors for weighing so much actual crime against so much contingent advantage. Even the moral proof of a God, for which Kant would capitulate after surrendering all the rest, has been betrayed by ethical writers who have made conscience a mere habit or tradition, so worthless as to have suggested in heathen minds divine lawgivers who countenanced murder, lust and pillage. It is openly discussed in the "Nineteenth Century," whether there can be any base or germ of morality outside of the Christian ethics. And all the time-worn paradoxes of mental science are the while paraded to the scandal of the unbeliever. Milton would seem to have ironically included them among the dismal pastimes of fallen spirits as they sat apart on a hill retired,

> —"and reason'd high
> Of providence, foreknowledge, will and fate,
> Fixed fate, free-will, foreknowledge absolute;
> And found no end in wand'ring mazes lost."

Pascal, in his thoughts upon the grandeur and misery of man, depicted him as but a conscious enigma, unable to conceive of matter, unable to conceive of spirit, and yet forced to conceive of both as united in himself; a depository of the truth, and yet a medley of uncertainties; a judge of all things, and yet a worm of the dust; an incomprehensible monster; the glory and the scandal of the universe. In our own materialistic era, devout thinkers are questioning anew the cumulative proofs of immortality. And Poetry itself, in the great

elegiac of the time, after voicing all the varied hopes and fears of the bereaved heart, can only leave it to its own baffled yearnings,

> "An infant crying in the night,
> An infant crying for the light,
> And with no language but a cry."

The doctrines of grace in the soul have been losing their saintly halo in the gairish day of modern thought. Regeneration, justification, and sanctification, faith, repentance and joy in the Holy Ghost, all the divine acts and supernatural exercises, have been evaporated into mere æsthetic fancies, moral duties, and logical abstractions. According to the German speculative divines, Schleiermacher, De Wette, and Marheineke, religion consists in the sentiment of the Infinite, the perception of the Divine, the knowledge of the Absolute. We are regenerated by participating in the human-divine life of Christ as still incarnate in the Church; we may be justified by our own penitent acts; we can only become immortal by losing our individuality in the eternal and the universal; and we are to be glorified through the expansion and dissolution of our finite consciousness in the infinite consciousness of God. According to the Anglican Platonists, Maurice, Kingsley and Jowett, the true Christ is already latent in every human being; all men are children of God and heirs of the kingdom of heaven; conversion is the spontaneous development of the Christian life; and the new-birth as a supernatural change is a mere fancy of the ecstatic apostles which the Church has since wrought into a dogma. American Unitarian divines, such as Hedge, Farley and Bellows, have re-stated and defined the same doctrines in somewhat similar terms; and in many orthodox pulpits they are no longer held forth with the uncompromising rigor of a former age.

The psychological miracles of Scripture are waning before the dawn of science into the most familiar mental phenomena. The Psalms, Prophecies, Gospels and Epistles are treated as but the inspirations of devout genius. The demoniacs were mere religious madmen who could only be cured through their own hallucinations, as when the Gadarene was permitted to believe that he saw a herd of possessed swine rushing

down into the sea. The Witch of Endor and the damsel at Ephesus simply imposed upon their cotemporaries like many a vulgar impostor since. The conversion of St. Paul occurred in a thunder-storm, by which he was struck blind to the earth with a mental image of Christ seemingly projected in the sky. His visit to Paradise was a sacred trance. The miracles of the apostles were wrought through the credulity of the populace. The supernatural gifts of the Spirit were exceptional endowments or the morbid phenomena of religious excitement. And all the apparitions, suggestions, and influences of angels and saints, in the early or modern church, are to be ranked with the ghost-stories of a village fire-side.

Scepticism in Sociology.

The biblical sociology might almost be said to have been abandoned without a blow. Few attempts have been made to harmonize it with the modern science of civilization. The great historical proof of an intelligent and moral Governor of mankind, derived from the consent of nations and ages, is rejected as obscure, contradictory and misleading. It is doubted whether the devil-worship of savage tribes or the gross mythologies of more cultivated peoples, can corroborate the pure theism of the Hebrew and Christian theocracy. The alleged marks of divine goodness in the social constitution are questioned in view of the distressing inequalities of poverty and wealth, vice and virtue, grandeur and meanness, which Paley and Chalmers have striven to palliate and explain. Doubts are thrown upon the general moral sense or public conscience for which Butler pleaded as a proof of the divine justice, when it is seen how often the world has applauded successful villainy and persecuted its best benefactors. And in the wide realm of universal history, it is still debated, whether the notion of final cause or design can even be admitted. Bacon speaks of deserts in history as in nature, like the long, dreary interval of the dark ages, for which no adequate cause can be assigned. Hegel has no room in his philosophy for unhistorical nations and races, that have been cast off as mere dross in the process of refining that absolute

reason which is yet to govern the world. And it is seen that sacred historians, like Bossuet and Prideaux, are obliged to leave out of their scheme of universal Providence, vast portions of mankind which have played no part in its development, whole civilizations in Western Asia and South America which have long since perished, like ships at sea, with scarce a wreck to tell the tale. Even those who admit special divine purpose in social phenomena are soon perplexed with worse anomalies than the serpents and monsters, the pestilences and tornados which mar the face of physical nature, in the monsters of cruelty that have scourged mankind, in the massacre of St. Bartholomew, the fall of Poland, and the great unexpiated crimes of history.

> "If plagues or earthquakes break not heaven's design,
> Why then a Borgia or a Catiline?"

And after all that has been written by enthusiastic dreamers in favor of human progress and perfectibility, there are less sanguine observers to whom the utter destruction of the whole existing civilization in some vast political convulsion or planetary disturbance would seem no more incredible than the bursting of a bubble or the blighting of a flower.

The doctrine of the Church as a divine institution has been pared down to the baldest rationalistic socialism. Its polity, worship, sacraments, all its supernatural means of grace, are merged and lost in mere moral and political ideals. As variously defined by the German rationalists, it is an organization of the theanthropic life of Christ, or a growing Christian republic, or a society for the promotion of natural religion and virtue. Its sacraments are mere didactic emblems and badges of universal brotherhood. In the system of the English rationalists the Church is the expansion of the family and national principle, or the world under a religious aspect, or the State in a Christian form. Baptism merely affirms the fact that men are God's children and new creatures in Christ; the Priest simply celebrates the great sacrifice made once for all and declares a universal absolution; and daily services, frequent communions, commemorations of saints and martyrs, and religious orders are to be prized only as aids and sanctions of our common Christian life. Even within the bosom

of orthodox American communions scarcely less rationalistic conceptions may be found in many members, who treat the Church as a temporary convenience, the ministry as a class of moral teachers with no exclusive function, public worship as an extemporaneous performance, and holy ordinances as useless forms.

The political miracles of the Bible, under the scientific scepticism, have been declining into common social phenomena. The supernatural judgments and deliverances of the Jewish theocracy in time of war, famine, and pestilence, were mere Providential events such as still figure in State-services on days of public humiliation and thanksgiving. The angels that at times have mingled in human affairs were originally the creations of Persian fancy, and are no more real than were the mistaken aerial shadows of the images on the Cathedral of Milan. The miraculous progress of the early Church can be explained by natural causes. As the world's history is the world's judgment and Christ has already come again in His Church, the last grand assize is but a dramatic vision. And the New Jerusalem, descending from heaven to earth, is but the type of a perfected Christian state.

Scepticism in Theology.

The biblical theology has been betrayed within the very walls of the citadel. All the great theistic arguments of rational or metaphysical theology, so carefully wrought in the schools, have been exploded, like bursting guns upon the ramparts, to the derision of the enemy. It was shown by Kant, Hamilton and Mansel that the ontological proof, derived from necessary existence, would absurdly make our thought the condition of reality; that the cosmological proof, derived from contingent existence, would groundlessly uphold the world with our notion of a cause; and that the teleological proof, derived from natural order and design, would weakly infer an Infinite Creator from a finite creation. Coleridge, in his day, deprecated the effort to represent the Deity, not only as a necessary, but as a necessitated being, and lamented the taste for books of natural theology, physico-theology, scientific

evidences of Christianity, as tending to displace the worship of Jehovah for a mere sentimental adoration of Nature;

> "A sense sublime
> Of something far more deeply interfused,
> Whose dwelling is the light of setting suns,
> And the round ocean and the living air,
> And the blue sky and the deep heart of man."

The moral theology, as we have seen, has fared no better. Arguments have been written upon the atheistic tendency of Butler's Analogy. Pitt is said to have acknowledged that it raised more doubts in his mind than it ever solved. And the new comparative theology would seem to have been already left like a deserted field-piece, in the hands of infidels, by apologists who have given up all paganism as a mere abortive growth of original sin or a diabolical caricature of Christianity. Or if a few divines have been striving to re-capture the lost munition, it is only to turn it against their own works, by lowering Christianity as much as they are lifting heathenism in the scale of true religion. There is, in fact, not a point of contact between the scientific and the biblical theology which has not been unwarily and sometimes ignominiously abandoned.

All the peculiar doctrines of revealed religion, the high mysteries of the Trinity, the incarnation, the atonement, have been stript of their divine splendor by a rationalistic speculation, and bleached into the most colorless metaphysical abstractions. The German speculative theologians, who are disciples of Fichte, Schelling and Hegel, have sought the Trinity in a mere successive, historical manifestation of the Creator, Saviour and Sanctifier of mankind, or in the objective, subjective and correlate phases of the infinite consciousness, or in the triplicity of the dialectic process. The incarnation is treated as but the continuous embodiment of the Divine Word, or Eternal Son of God, in the human race, and the atonement as the reconciliation of the finite reason with the Infinite Reason, the union of the human with the divine in the development of the Absolute. The English clergymen, who have been restoring Plato and Philo, have represented the second person of the Trinity as the Logos or Divine reason, manifested fully in the man

Jesus, but still potential in every human being; and the atonement, according to its literal meaning, as the process of becoming at-one with God. And American divines, both in and out of the Unitarian Church, are advocating, more or less knowingly, systems of mere natural religion, and couching them in Scripture phrases and orthodox forms.

All the miraculous evidences of Christianity, its divine insignia among the other religions of the world, have been gradually, by a scientific biblical criticism, degraded into mere sacred myths and legends. First came the early rationalistic interpreters, such as Ernesti, Semler, and Michaelis, studying the Bible as they would Homer or Livy, in the light of contemporaneous history, and treating its miracles as popular superstitions to which Moses and Christ had accommodated their teachings in a rude age of the world. Then followed the naturalistic critics, such as Eichorn and Paulus, ingeniously explaining the supernatural events of the sacred history as fiction founded on fact, mere extraordinary or even common occurrences which had been embellished by the excited senses and imagination of the spectators and historians of the time, like the exploits of Achilles and the adventures of Romulus. At length appeared the strictly mythological exegetes, such as De Wette, Gabler and Bauer, finding philosophic as well as historic myths successively in the Old and the New Testament, unconscious inventions of facts in accordance with traditional ideas, spontaneous creations of the Messianic fancy, then universally credited, no more actual than the story of Apollo or the feats of Hercules. At the same time, there had been growing up an idealistic philosophy from Kant to Hegel, which stood ready, after the manner of the classic mythologists, to infuse its ideas into the Christian myths as their hidden meaning and only essential truth, somewhat as Bacon, Schelling and Müller had already philosophically interpreted the Greek and Roman fables. All things seemed thus conspiring to one result. A point had been reached where German pantheists could unite with English deists and French infidels in attacking, from different quarters, the entire historical truth of the Gospel. Woolaston, Bolingbroke, Voltaire, Reimarus and Lessing might be made

to join hands with learned theologians and professed defenders of the faith. And it was then that the stealthy treason was unmasked by a young divine, since known as the infidel Dr. Strauss, of whom it has been said that he collected all the various doubts with which the historic Christ had ever been assailed and tore away the metaphysical veil that screened them from popular view, as Antony lifted the robe of Cæsar and showed the wounds which each conspirator had inflicted in the dark. Henceforth, Christianity was to be accepted not as a sheer imposture, nor yet as a true history, but simply as a gorgeous mythology which has descended to us from the twilight eras of time, gathering in its train the gray-haired patriarchs, priests and prophets, the divine Messiah and Apostles, the holy fathers, martyrs and doctors, and yet ever bearing within its bosom those eternal truths by which the saint and the philosopher alike must live.

The psychical sciences, as thus robbed of their biblical portions by the sceptical spirit, would leave us only a psychology without the Christian virtues and graces, a sociology without Providence and the Church, and a theology without Jehovah and without Christ.

Sceptical Religious Philosophy.

At length we may meet our religious sceptic on the heights of philosophy returning from his survey of the sciences only to escape their controversies and proclaim their failures in some hopeless theory of knowledge, like the spies who brought back an evil report of the giants of Canaan.

At one time, he is ready to abandon reason for the sake of revelation. That only apologetic weapon with which to defend the Divine Word is made to explode in his hands. The finitude, the inconsistency, the weakness and the depravity of the human intellect are magnified until truth is lost in paradox and faith vanishes in doubt. It was thus that Bossuet, in his "Variations of Protestantism," would have disgusted the emancipated reason with its errors and driven it back to the chair of infallibility by what Turrettin styled a sort of "Papal Pyrrhonism." It was thus that Huet sought his "Evangelical Demonstration" in the impotence of that

very human understanding to which he appealed, and Pascal would have reared his projected apology for the Christian Faith upon a Cartesian basis of universal doubt. It was thus that Glenville, in his "Scientific Scepticism," inveighed against all intuition of causes, all real knowledge as vain uncertainty and impious pretension, and Berkeley, whilst inquiring into the chief sources of error and difficulty in the sciences, laid the train through which Hume undermined the very foundations of knowledge, both divine and human. It is thus, too, in our own time, that Hamilton has arrayed the heroes of faith as martyrs of doubt at the grave of philosophy, and furnished Mansel with such narrow "Limits of Religious Thought" that he would have proved a revelation all but impossible by showing a God to be inconceivable. And the age is still full of brave, despairing thinkers, who are practically swayed by the same principle; gentle sceptics, who after pursuing through the schools the various speculative theogonies in which philosophy has striven to swallow up theology, have become appalled at her profane attempt to unfold the enigma of the universe by mere logical process, and fled for refuge to some easy creed of paradoxes retaining the mass of truths in a state of simple contradiction; the Schlegels, the Newmans, the Brownsons, the Walworths, who with Father Stone have heeded the voice of the unerring Chief Pastor, and sought repose from doubt on the bosom of Holy Mother Church.

At another time, however, the religious sceptic seems ready to abandon revelation for the sake of reason. That only infallible word of God is prejudged and forestalled by its own professed pupil. Its normal limits, its concurrent evidences, its supreme authority are questioned and diminished, until mere human reason is left as the sole arbiter of truth and judge of controversy. In this spirit, Kant prescribed as the only legitimate topic of inspiration a species of moral religion which he could find within the bounds of the pure reason; and Fichte attempted a "Criticism of all Revelation" which would have arbitrarily predetermined its whole method, spirit, and contents; and Röhr and Wegscheider made the moral reason or mere human conscience the supreme judge of what God

should teach to man. In this spirit, Paley magnified the miracles at the expense of the doctrines, and Coleridge exalted the doctrines over the miracles, as insignia of the Divine Word, until both evidential schools, as led by Mansel and Jowett, became involved in doubt and suspicion, like a divided army wrangling in front of the enemy. In this spirit, too, a long line of biblical critics, from Semler to Colenzo, with their free discussion upon the Canon, have been exscinding one sacred book after another, from Genesis to the Apocalypse, as too unedifying, inconsistent, puerile, to have come from the supposed Divine Author, or alleged human writers. And in this spirit, at length, the sovereign authority of Scripture itself, as expressed in the creeds and canons of the Church, is perversely evaded or openly defied from the throne of the bishop, the pulpit of the preacher, and the chair of the divine. On all sides are restless spirits breaking away from the ancient moorings of faith; bold, but rash seekers of truth who, having been long familiar with those mystic theodiceas by which theology has but played at philosophy, at last become disgusted with her fond effort to array the universe as a mere dogmatic marvel, and lapse to some bald creed of negations, containing in itself the merest fragment of truth; a Francis Newman, a Theodore Parker, a David Strauss, passing through all the phases of faith, with but a brief suspense in doubt, to the total eclipse of unbelief.

The philosophic system issuing from such religious scepticism, if system it can be called, simply sacrifices the biblical to the scientific portions of knowledge, or retains them both in hopeless contradiction. From the day that Schleiermacher reported the distant advance of science as a new assailant of the Bible, and himself proposed to abandon the outworks in Genesis and flee into the open field of history, the shameful policy of surrender and retreat has gone on, until the crisis which he predicted would seem to have come, when such apologists must choose between deserting to the enemy or being ceremoniously interred in their own fortifications. Some English thinkers have certainly reached that juncture. The gifted Miss Cobbe, in her "Broken Lights," admits that for the extreme Broad Church, whenever the Bible contra-

dicts Science, there is no alternative but the sacrifice of biblical infallibility. Baden Powell and Jowett have already given up the Hebrew Scriptures in order to save the Christian, as if (said Mendelssohn, when advised to recant Judaism for Christianity) one should flee into the second story while the first is in flames. The Rev. Stanley T. Gibson, in his work on "Religion and Science," maintains that the real schism between them is in the still more fundamental region of natural theology, where he unsettles the supporting arguments of Paley and Butler, concerning the wisdom and goodness of the Creator. The Rev. T. W. Fowle, in his "Reconciliation of Religion and Science," maintains that all the methods, dogmas and creeds of Christianity must pass under the yoke of scientific inquiry and continue to exist only so far as science permits and approves, and that with the death of the old theology will begin the new religion. The Duke of Somerset, in his "Christian Theology and Modern Scepticism," has sought to expose the human elements of error which in the course of ages have become mixed with the whole doctrinal system of Christianity, and maintains that it is waning before some better day, when the sectarian bodies and lower orders shall have participated in the religious culture of the higher classes. Mr. Matthew Arnold, in his treatise on "Literature and Dogma," avers that already the whole existing theological interpretation of the Bible is but a tradition of the clergy, which has lost its hold upon the people, and that a better apprehension of it can only be gained by means of that large, generous culture which shall concentrate upon it the best thoughts of the best minds in all time, and thus unfold its only essential and universal truths.

The French, the Swiss, the Dutch schools of religious scepticism are but repeating the same strain with variations. Numerous American authors of essays, sermons and reviews on the relations of Science and Revelation, are only incautiously beginning a new cycle with swifter movement, at the outer rim of the vortex, by conceding that the Bible, in which they believe, teaches physical errors in connection with its moral and spiritual truths, as if its ethics and theology can be retained after its astronomy and geology have been

abandoned. And other more scientific investigators seem only to perceive and announce the growing antagonism, while contributing but little to the work of harmony. Dr. Draper has ably sketched the "History of the Great Conflict between Science and Religion," without also retracing their great alliances, and concludes with the hope that Reformed Christianity may yet be reconciled with advancing science by carrying out the Lutheran maxim of private interpretation with absolute freedom of thought. President White has omitted from his brilliant annals of the "Warfare of Science" any account of the assaults upon religion, and in view of the fact that science is destined to modify the dominant religious conceptions of the world, suggests that influential religious persons should make the adjustment as quietly and speedily as possible.

And the dispiriting effect of such scepticism is seen in a large, increasing class of speculative minds who, amid the doubt and distraction of the age, have begun to despair of any intelligent concurrence of reason and revelation, and to abandon all attempts at a logical organization of scientific and biblical knowledge. They are among the finest, most cultured spirits of the time. Naturally of a reflective habit, with an innate hungering and thirsting after certain knowledge, and a dauntless spirit of research, which are among the noblest auguries of success, they have yearned after some theory and system which shall give unity and form to their fragmentary belief and information. In search of this loved ideal they traverse one after another the different sciences; they scale height after height of shadowy speculation; they pass, with patient initiation, from school to school of philosophy; they describe the whole circuit of vagaries, by turns rejecting and maintaining the most opposite premises, and familiarizing themselves to the most absurd conclusions, until at length all proper conditions of faith are unsettled in their minds. Granting nothing, denying nothing, doubting everything, they have lost that healthy appetite for realities, that wholesome relish for facts, which belonged to them ere they had run such a course of intellectual dissipation, and become like the sated voluptuary with the world's pleasures palling upon his taste.

A shade of mournful suspicion and disgust gathers over the whole field of thought, lately so glowing with the splendors of their discursive imagination; and there is nothing left them but the dirge of the preacher over the weariness of study, the multiplicity of books, and the vanity of all human wisdom.

The sceptical philosophy, which would thus divide and distract the body of knowledge by tearing its biblical from its scientific members, can no more prove itself the true mother of science, than could the woman at the court of Solomon make good her right to the child which she was ready to have cut in twain before her eyes.

Effete Religious Culture.

At the last, the sceptical spirit may be seen emerging in practical life with a despairing view of all the different spheres of Christian civilization, as but like so many once fair provinces that have been abandoned to decay and ruin.

In the midst of our boasted culture, some leading minds have been discerning the signs of moral decrepitude and death. The Chevalier Bunsen speaks of the novels of Victor Hugo, Balzac, Dumas, and Eugene Sue as expressing the despairing consciousness of an unbelieving age which would use religion only as a spice of fiction; of the modern opera as clothing the spectre of despair in the rags of mediæval piety, with organs on the stage in place of flutes, hymns for sentimental songs, processions of monks and nuns instead of military shows; and of the rococo style in painting, which would hypocritically and satirically combine the pig-tail of Louis XV. with the angelic faces conceived by Giotto and Perugino. Thomas Carlyle would seem to look upon all the rapid movements of modern civilization as but the rush towards a "Niagara" of ruin; Mr. Gregg even discerns the "rocks ahead" in the moral, political, and social perils of the time; and Mr. Matthew Arnold imagines us already whelmed in an "anarchy," from which only some new form of culture can deliver us. And these voices of alarmists are but interpreted by the religious sceptic as indications of a general and seated decay of every great human interest.

He has no faith in any regeneration of literature. He

remembers that the revival of letters by Boccacio and Erasmus simply blended Pagan with Christian culture, and that Protestantism has ever since been declining from its own earlier literary models. The earnest believing ages which produced the chaste fervor of the English liturgy, the solemn grandeur of the Paradise Lost, the demure grace of Pilgrim's Progress, the quaint saintliness of the Temple, and the didactic strains of the Task and Night Thoughts have been followed by the mocking scepticism of Faust, the subtle atheism of Queen Mab, the defiant unbelief of Cain, the daring impiety of Festus, the blasphemous scoffs of Heine, and all the irreverent wit and satire discharged at the godly faith of purer days. If we have had the natural piety of Thomson, Wordsworth and Bryant, we now have also the gross naturalism of Swinburne, Walt Whitman and Joachim Miller. And the very muse of Christian devotion has begun to trail her white robe in the mire. That fastidious dislike of evangelical phraseology which Foster and Chalmers criticised in men of taste has become justified, in his view, by a new gospel of slang which soils Holy Scripture with impure English, takes its text from the newspaper, draws its parables from stale anecdotes and vulgar incidents and admits the colloquial freedom of common life into the sacred realm of prayer and worship. It is not in the Sunday-school novel, the proselyting tract, the polemic treatise, the religious journal, that he discerns the signs of any classical revival for which he may long, and he can only sigh over a former age of Christian literature that will never return.

As little faith has he in any religious regeneration of art. He does not forget that she was of Pagan rather than Christian birth; that she ceased to be Grecian in becoming Gothic; and that then her most splendid trophies were the direct fruit of a religious system which for three centuries has been on the wane. Other and grosser interests now claim the wealth, genius and labor once so piously lavished upon the magnificent cathedral with its sacred treasures of painting, sculpture, music and oratory. The new æsthetical Christianity that would reclaim such lost appliances is but decking itself in borrowed finery and parading as a mere spectacular

form what was once only the due artistic expression of an earnest faith. It has no architects to design its fit temple, no painters to depict its story, no sculptors to image forth its saints, no Bernards and Massillons to give it eloquent voice. Even the few simple graces, retained by the highest Protestant culture, have long since widely degenerated into a plainer worship. The majestic liturgy with its solemn litany and collects, its grand old chants and hallowed hymns, has given place to the sensational sermon with a prelude of wandering prayers and pious jigs and glees. He can find no germs of a new Christian art in the rudeness which does not crave it or in the culture that for the lack of it is hopelessly reverting to pagan and papal ideals that belong only to the past.

> "The famous orators have done,
> The famous poets sung and gone,
> The famous speculators thought,
> The famous players, sculptors, wrought,
> The famous painters filled their wall,
> The famous critics judged it all."

Still less faith has he in any Christian element in politics. He recalls the union of the Church with the State under Constantine, and of the State with the Church under Hildebrand as examples of the inevitable failure of all theocratic experiments. And the separate development of Church and State since the Reformation has but wrought a breach in modern society, which he sees no method of healing. As a churchman, he deplores the loss of those ecclesiastical functions which were designed to conserve and purify all human institutions. As a statesman, he laments the decay of public virtue in high places, the diminished respect for kings and nobles, the shameless corruption of republics, and the brute ignorance and vice which soon pervade the purest democracies. And as a socialist, any youthful dreams he may have cherished of a new ideal commonwealth of the future, have long since faded away and left him the mere hardened cynic who sneers at the present social state as a sort of tragic farce, or the fatalist who dooms it to certain vast cycles of natural growth and decay, and pensively sighs over the grandeur and

decadence of nations, states and empires as but the melancholy lesson of all history.

At last he loses all hope of any complete triumph of the Christian religion itself. It has but followed Judaism as one divine economy succeeds another, with no elements of self-perpetuation; and even Protestantism, though vigorously resisting the corruptions of Catholicism for a time, begins to show signs of disintegration and decay. The high thinking and plain living of a former age have been reversed, and that superangelic pietism which fancied itself ready to suffer eternal perdition for the divine glory, after paling into an intellectual transcendentalism or metaphysical orthodoxy, has at length vanished in mere Horatian culture and Epicurean luxury. And if he may have indulged in any speculations as to some future absolute religion in which all others are to be merged, he has soon found them superficial and visionary, and become the religious pessimist who regards defect and evil as inherent in the whole finite creation, or the ascetic who rejects humanity as hopelessly corrupt and irredeemable, and turns away from the whole existing civilization with all its accumulated arts, sciences and politics as so much splendid rubbish of sin soon to be wrecked in the flames of a vast judicial conflagration.

Thus the despondent sceptics on both sides are falling into apathy, and would alike paralyze all effort. If they can be said to admit a question between science and religion, it is only to adjourn it at once to another life, or reduce it to a nullity; while the whole existing civilization and Christianity they would treat as simply experimental and abortive.

Against this last and most specious of the errors under review, it only remains to urge that the prospective must grow out of the existing relations of reason and revelation. Though neither seems now in full harmony with the other, yet both are in an actual process of reconciliation. Far distant as may appear their coincidence, yet we are at least at its beginnings, and may already strive for its accomplishment. The despair that, on account of some first failures, would abandon it, or postpone it to an ideal heaven or remote future dispensation, is to be resisted for several reasons:

In the first place, the spirit of such scepticism is weak and ignoble. What if it be true, that all present knowledge must soon be lost in beatific vision, or be eclipsed by millennial glory, or is at best but confused and meagre; shall we therefore despise it, and make no effort to purge and increase it? Had the generations before us so thought and acted, where now would have been the Christianity and civilization that adorn our era? So long as we are on the earth, and members of the race it nourishes, it will be a high duty, as well as instinct, to swell the tide of truth in all lands through all time. Better far to toil after even an impossible ideal of knowledge, than to sink in supine ignorance; better to yearn after the boundless unknown as ever knowable, than basely to despair of it as unknowable. The worthy aim and rational goal of science is not nescience but omniscience.

In the second place, the premises of such scepticism are narrow and unfounded. Because religion and science are as yet imperfect and discordant, it does not follow that reason and revelation themselves are defective and in need of some miraculous readjustment. We cannot, in fact, conceive of any better or any other modes of cognition than those with which we are now familiar. A future state, wherein the soul is to seize the whole infinitude of truth by one swift intuition, or in one blazing apocalypse, is but the dream of a mystical fancy. As the Infinite Mind has been gradual in unfolding the universe, so must the finite mind be gradual in reviewing it; and if the Creator passes through chaos to cosmos in the process of creation, shall not the creature, retracing that process, be ofttimes worn and bewildered ere he reach the vision and sabbath of perfect knowledge? It would seem to result from their logical relations to one another, that it is the function of the finite reason to recapitulate the Infinite Reason; that in this endless effort after the divine rationale of the universe, the sciences must ever proceed as now by joint revelation and experience, and in the order of the creative logic, from the simpler to the more complex phenomena, each resuming that which is behind it and requiring that which is before it; that since this problem of creation, upon which they are engaged, has immensity for its scene and eternity for its scope,

both celestial and terrestrial races are embarked in the mighty argument on the basis of their present material and spiritual relations; and that there can be no pause nor retreat in their progress, but only an eternal approximation of that fulness of knowledge which shall be gained, when all the worlds of space shall have given up their secrets and all the ages of time shall have unfolded their marvels, and God shall be all in all.

In the third place, such scepticism ignores past progress. Appalled at the vastness of the unknown, it overlooks the known and is blind to the immense advance of the present over former generations. The actual history of the sciences shows that it is only during their imperfect stages of development that they come into seeming conflict with revelation; that in their issue, through their own discoveries, they but authenticate the facts and prove the truths of Scripture; and that by the very law of their successive evolution they involve a logical unfolding of the Infinite by the finite reason and a cumulative vindication of the divine attributes in the order of their manifestation and dignity, from that science which discovers to us a Celestial Mechanician, infinite in power, up to that which may yet disclose to us a Celestial Father, infinite in love. Astronomy has already emerged from the mists of infidel criticism with an overwhelming exhibition of the God of Scripture as also the God of Nature, and the reasonable presumption is that the whole train of the sciences in their normal order will follow, until the entire Deity as revealed shall be also demonstrated; the illustration of His natural attributes afforded by physics at length finding its crown and complement in a still more glorious illustration of His moral attributes through the psychical sciences. Even geology may yet only elucidate Genesis, and sociology forecast the apocalypse; the one by a scientific revision of the course of nature and the other by a scientific prevision of the course of humanity. And when at length the terrestrial physics and ethics are thus complete, there will be the means of projecting that system of celestial physics and ethics, through which to mount with growing knowledge and faith, in endless progression, toward the perfection of omniscience itself. To suppose that this grand

series could be rudely broken by a miraculous millennium and so much of it as already lies in the past left without its logical sequel and complement in the future, would be to suppose an anomaly for which all nature could afford no analogy, precedent or palliation.

In the fourth place, such scepticism mistakes the present social exigency. Through all ages the populace has craved prodigies and catastrophes, rather than the ordinary means of Providence, for the world's regeneration, and can still think of no better corrective of its existing moral and intellectual evils than some new divine economy to be forced upon it by means of destructive judgments, involving vast planetary convulsions or political revolutions. In this respect the religious despondent differs from the religious eclectic only in seeking a miraculous rather than an artificial reconstruction of society. It may be vain to argue against such a defect of thought, blended as it often is with the purest faith and zeal; and yet there will, notwithstanding, always be those, having like faith and zeal, whom it fails to satisfy, and who are content to look for a millennium which shall be an intelligible triumph of the Divine Reason through the human reason over all error and sin; a growing demonstration of revealed truth, before which all false opinions and institutions shall slowly fade away like mists and clouds of sunrise, until the whole race is transfigured and the earth full of the glory of God.

This hopeful view is more in keeping with the analogies of prophecy. No principle is plainer than that the transition of prophecy into history appears violent and dramatic only in prospect. As the Christian economy quietly resumed and carried forward the Hebrew economy, so the millennial economy may prove to be but the existing human world as matured and perfected. And even if a destruction of the present physical system be within the scope of Scripture and of nature, it would seem that it could only be with a view to some more glorious moral reconstruction, whereby the whole past shall be taken up again into the future, even as Providence has already erected the modern out of the antediluvian world, and yet left both the individual and the social constitution of the race unimpaired.

The same view is more in keeping with the analogies of history. All philosophic historians are beginning to conceive of the career of humanity as spiral rather than circular, marked by average progression rather than mere fruitless recurrences and aimless repetitions. Great men may live and die, empires may rise and fall, whole civilizations may flourish and decay; but the race itself, inheriting and transmitting from one generation to another, always survives and, Phœnix-like, springs for bolder flights and grander prospects. Hebrew, Greek, and Roman ideas are still powerful in modern society, though the nations which wrought them out have ages since perished. Can we believe in the face of six thousand years of such progress that the social system is to be arrested and destroyed? After all the advance that has been made in the long lapse of time, will any millennium appear too distant or utopian to have its growth out of even this present disordered world?

The same view is demanded by the organism of society. According to that organism, the progress of the arts depends upon the progress of the sciences, and the former come to fruition in the order of the latter. Already the material arts are shedding a millennial splendor in the marvels of printing, steam and telegraphy, while the remaining series begin to presage the decline of caste, war and superstition, through the agency of commerce, diplomacy and philanthropy. And it enters into the very notion of social regeneration, that this organism of society should continue to be developed until its ideal is fully realized in a perfected Christian art, science and polity, and the whole race intellectually, morally and physically transformed. Upon any other terms, a millennium, properly speaking, is simply inconceivable, if not impossible.

And the same view harmonizes the otherwise conflicting interests which science and religion have fostered. Instead of abandoning both or postponing both to some vague hereafter, it begins at once to practically unite the natural and the supernatural, the terrestrial and the celestial, the human and the divine. Heaven is found to be but the full flower of earth. The kingdom of the heavens (as the Greek may be rendered) is that realm of planets, suns and stars, to which the earth is

both spiritually and materially linked, of which now we have some scientific hints from celestial mechanics and chemistry, but which shall yet be more fully unfolded by celestial sociology and theology as the abode of our Father who is in the heavens, and of whose Son the whole family in heaven and earth is named. The world to come is to be thought of as being historically developed out of the world that now is, and the life of the individual so bound up in the life of the race, that both have their resurrection together, whensoever the spiritual shall so predominate over the material forces of the planet as to transfigure it into an abode of truth and righteousness. Even the coming of the Son of Man to judge both quick and dead, and the triumphal meeting of saints and angels in the skies may be viewed as not less a crisis than a pageant; the rational blending of the earthly into the heavenly history; the glorious appearing of a new, redeemed orb amid the sisterhood of worlds; the winged globe bursting from its chrysalis and blazoning its cross among the stars.

We may therefore conclude, after a full survey of all modern philosophical opinions, that the two great interests of religion and science are not only reconcileable, but actually being reconciled. Let neither the scientist nor the religionist despair of their ultimate harmony, but rather let both strive together to effect it, and therein hail at once the thorough fusion of Christianity and civilization and the practical union of earth and heaven.

PART SECOND.

THE PHILOSOPHICAL THEORY

OF THE

HARMONY

OF

SCIENCE AND RELIGION.

CHAPTER I.

THE UMPIRAGE OF PHILOSOPHY BETWEEN SCIENCE AND RELIGION.

It is a preliminary task which Philosophy exacts from her votaries, before entering upon any grave inquiry, to cleanse the mind by means of pure thoughts and strict definitions. If the mere novice is apt to disdain such discipline as irksome or needless, he soon finds that without it he cannot hope to penetrate to her inmost mysteries, or will invade the oracle only to be perplexed and abashed by its responses.

There is especial need of all the philosophic virtues in approaching the great question which is now before us. We have seen that for more than three centuries the civilized world has been agitated by an unnatural strife between the scientific and the religious classes. Many battles have been fought; much learning and research on both sides expended; and already some substantial advantages gained. Religion has grown more tolerant of scientific opinion; science has shed new light upon religious truth; and the salutary lessons of their former controversies are not yet spent in other fields of inquiry. But after all, what progress has been made toward a settlement of the general question involved in such conflicts? How much nearer are we to a final philosophy or accepted theory of the reciprocal relations of reason and revelation, of science and religion? What broad surveys have we of their distinct provinces and common ground? What clear discriminations of their respective methods and laws, and of their logical and historical interaction? And what systematic

attempts at harmonizing and organizing the existing bodies of knowledge which they have developed? Must not every enlightened observer admit that the field of controversy has been widening rather than contracting; that the state of parties throughout that field grows more involved and serious; and that the tenor of the strife is already critical? And is it to be maintained that this is the normal or final relationship of the two interests? Are they of necessity and always mutually indifferent, antagonistic, exterminating? Or, do they admit of gradual reunion, coincidence and harmony? These are questions which begin to force themselves upon thoughtful minds. They not only invite, but require and deserve consideration. Their very difficulty and delicacy are overborne by their urgency.

And what makes the great reconciliation still more imperative is the growing conviction which has been all along latent in many minds on both sides of the question, that the whole conflict is needless, if not unreal, and largely due to the false issues and misleading phrases of mere professional tactics. It was one of the trenchant sayings of Dr. Johnson that the apologetical divines of his time had so managed the evidences of Christianity as to put the apostles on trial for forgery every night. Professor Maurice agrees with "A Layman" to whom he writes, in censuring those weaker brethren who struggle to protect the Bible from the last new theory propounded at the British Association, and are thrown into ignominious rapture or terror by the favorable or unfavorable comments of any distinguished member of that body. At the same time, veteran scientists, like Agassiz, Gray, Henry and Lionel Beale, have deplored the needless effort of some of the younger naturalists to dispense with all theistic conceptions in their researches, and the still more unwarrantable attempt of others to impose upon the laity certain atheistic and materialistic speculations which have never been received within the profession as scientific verities. Bishop Berkeley, in his sketch of the Minute Philosopher, would seem to have anticipated a race of brilliant and accomplished savants of our day, who would eschew the pedantry of a college education and make an irreligious form of science fashionable and popular

by means of instructive lectures, seasoned with wit and raillery and uttered with spirit; a sort of sect which diminish all the most valuable things, the thoughts, views, and hopes of men; all the knowledge, notions, and theories of the mind they reduce to sense; human nature they contract and degrade to the narrow, low standard of animal life, and assign us only a small pittance of time instead of immortality; and when they are charged with these opinions, they very gravely remark that they have done no injury to man, since if he be a little, short-lived, contemptible animal, it was not their saying it made him so. "Be it ours," —says the eloquent Dean of Westminster, in a recent address at St. Andrews, on the reconciliation of theology and science, "to fasten our thoughts not on the passions and parties of the brief to-day, but on the hopes of the long to-morrow. The day, the year, may perchance belong to the destructives, the cynics, and the partizans; but the morrow, the coming century, belongs to the catholic, comprehensive, discriminating, all-embracing Christianity which has the promise, not of this present time, but of the times which are to be."

We believe that the mass of scientific and religious men are not to be found in any of the parties which have been delineated; neither among the Extremists, who would put religion and science at variance, nor among the Indifferentists, who would disjoin and seclude them; nor yet among the Eclectics who would blend them illogically, nor still less among the Sceptics who despair of their reconciliation. Rather is there a general persuasion of their essential harmony and a feeling that the time has already come to insist upon that harmony as the normal state of their relations; to raise this imaginary siege and blockade of "evidences" and "apologetics" by which for some time past they have been estranged and divided; to dwell upon their ancient alliances rather than their transient conflicts, and proclaim a just peace amid their seeming warfare; in a word, to lift the standard of that catholic, conclusive philosophy which shall intelligently embrace them both in a rational coalescence, shall ascertain and formulate the terms of their lasting amity, gather their blended trophies, canonize their saints and heroes, and cele-

brate their mutual victories, for the divine glory and human welfare.

And we shall need to enter upon this part of the treatise with a brief survey of the present state of the sciences, from a philosophical point of view. Without such a survey we cannot hope to understand the precise work to be done in harmonizing and organizing them. Indeed, as Whewell and Comte have shown, it is only by a careful study of the sciences themselves that we can reach their true philosophy or that science of the sciences which they must yield as their last and noblest fruitage. It is only from a knowledge of their past growth and present condition that we can forecast their future progress. Now, it has been seen in a previous chapter, that each of them, since the Reformation, has broken into two sections, the one mainly scientific and the other largely religious, and that these two sections in parting from each other have proceeded through three distinct stages; the first, a stage of healthful separation and progress, marked by ascertained facts and truths; the second, a stage of mutual avoidance, filled with conflicting hypotheses and dogmas; and the third, a stage of open rupture issuing in antagonistic speculations and beliefs. It is to the second of these stages that we are to confine our attention in this chapter. Leaving out of view those portions of knowledge which have attained to scientific certainty and are no longer in debate, those discovered facts and laws which alone make positive science, we shall find remaining to be considered a mass of unsolved problems, mostly questions of origin and destiny, which are growing more complex every hour, and before which the religious and scientific champions of our day are crossing lances, like the two knights before the mystic shield, with their respective hypotheses and dogmas in a more or less contradictory state. It will be our first task to survey the opposite sides or phases of these questions, as expressed in such dogmas and hypotheses, from an independent position, in a strictly philosophical mood, without prejudging them in the slightest degree, and with an effort to do each of them the utmost justice. We shall then have the whole case before us, with the materials for a full and fair decision.

Let it therefore be carefully noted, once for all, that the hypotheses and dogmas which are held respecting scientific questions are now coming before us in their pure and simple form, without any admixture with each other, and as enunciated by the highest authorities. Among both scientists and religionists, as we have seen in previous chapters, may be found many who seek to blend the theories of science with the doctrines of religion, as well as some who would put them apart or at variance. But such classes do not now come within our survey, as our present object is simply to recall and briefly recapitulate those problematical portions of each science, which are of a hypothetical and a dogmatic nature, and which together form the debatable ground between the two parties to be reconciled.

Problems in the Physical Sciences.

Astronomy—to begin with the oldest of the concrete sciences—still offers to the two parties that ever present problem which has tasked our race for thousands of years, the origin of the heavens, the production of those mysterious bodies, the sun, planets, and satellites, the stars, galaxies, and nebulæ which fill the immensity of space around us. On the scientific side of this question, we have the hypothesis of universal evolution, of a spontaneous growth of worlds out of crude matter, by means of its own laws, from an indefinite immensity and antiquity; in a word, the rise of the present cosmos from a primitive chaos. It is an hypothesis as old as the fortuitous atoms of Democritus and Epicurus; and though it slumbered during the early and middle ages until it was revived by Bruno and Gassendi in the seventeenth century, it has since come forth again with renewed vigor and in more scientific forms. Descartes led the way with his original plenum of vortices, forming and whirling the sun and planets, in vast concentric eddies of different kinds of matter. Kant followed with his primitive chaos of attractive and repulsive particles, massing into revolving globes and poising themselves in the equilibrium of the planetary forces, according to the Newtonian principles of mechanics. La Place at length completed such views with his magnificent postulate of a

universal nebula or fire-mist, eddying into a central igneous body like the sun, and then breaking into rotating rings, cooling into cloudy and watery spheres, hardening into solid shells, like the different planets of the solar system. The elder Herschel pushed this sublime speculation with the telescope into the sidereal heavens among the nebulous masses which were there supposed to be forming themselves into other suns, planets, and systems. And by many living authorities it is now claimed that the nebular theory, as confirmed by the spectroscope, enables us to trace the different phases of cosmic growth in the heavens as plainly as any organic process upon earth.

On the religious side of the same question we have the dogma of immediate creation, of an instantaneous starting forth of the heavens and earth from nothing, in their present form, at the mere word of Jehovah. It is a dogma dating from the Hebrew and Christian Scriptures, and in various terms has been formulated and handed down to us by the rabbis, the fathers, the schoolmen, the reformers, and the divines of the following age. Philo, the Platonic Jew, in agreement with the Maccabees, held that the worlds were not formed from anything pre-existent, but spoken into being by the Divine Word. St. Augustine taught that the Deity fashioned the heavens and earth not out of matter, nor yet out of Himself, but of nothing, by an instantaneous exertion of His own free will. St. Aquinas followed with the scholastic distinction, that God from eternity willed that the world should be, and not that the world should be from eternity. Calvin stigmatized as a profane jeer the inquiry why the heavens and earth should have been created only six thousand years ago, after so many idle ages had rolled away and with so much vacant space left running to waste. The great body of living divines following these different authorities in the Jewish, Greek, Roman Catholic, and Protestant Churches, still teach and confess the same dogma, and at this hour it stands defined in the same terms as when the heavens were but admired as a blue canopy or illuminated dome.

Besides the origin of the heavens, the question of their destiny, so long a mere theme of devout fancy, is becoming

also a problem of exact science. It was taught by all the great doctors, poets and artists, from the days of Clement, Bernard, and Angelo, that the whole existing firmament might at any moment be destroyed and renewed by the flames of a general conflagration in order to become the pure abode of saints and angels; and even since the rise of astronomical conceptions, the comet, the meteor, and the aurora have ever and anon been hailed as portents of judgment and signs of the approaching kingdom of heaven. But we are now assured, on the authority of leading physicists, such as Grove, Helmholtz, and Tyndall, that so far as science can yet foresee, the advancing evolution can only issue in gradual dissolution; that the potential forces of heat, light, and life, which have been stored from the primitive nebula, or from surrounding meteors in star, sun, and planet, as the ages roll on, will inevitably be spent, and the whole machinery of the heavens fall back into ruins; that already the moon is but a charred cinder of the earth, the earth a cooling ember of the sun, the sun a blazing fragment of the stars, the stars themselves but dying suns, and all their galaxies doomed to pale and wane into universal night and death.

The design of the heavens, the habitability of other worlds and their mutual relations, the possibility of life and intelligence throughout the universe, are also emerging questions of like double import. While the one party, from Dionysius and Gregory to Chalmers, have imagined an ascending hierarchy of angels, principalities and powers, rank above rank, through the heaven of heavens toward the throne of Jehovah; the other party, from Plutarch and Kepler to Whewell, can discern in the stars, sun, and planets only so many globes of fire, vapor and slag, wholly incapable of sustaining life and reason, and as destitute of any intelligible purpose as the crystals that sparkle or the flowers that bloom where no eye can ever see them. And the concluding question as to the goal or aim of the whole cosmic process has at length issued in the extreme opinions of Jonathan Edwards and Herbert Spencer; on the one hand, that of a miraculous creation and regeneration of the heavens and earth at fixed epochs for the good of creatures and the glory of their Creator; on the

other hand, that of a rhythmic ebb and flow of ever-persistent force from nebula to planet and planet to nebula, from chaos to cosmos and cosmos to chaos, through endless cycles of evolving and dissolving worlds, appearing and disappearing like the drops which sparkle in a sunset-cloud.

Geology next meets us with problems scarcely less grand and even more interesting, such as the origin of our own planet, the formation of the rocky layers which inclose its hidden contents, and the growth of the fossil plants and animals which are found buried in its crust. On the one side of the question is the hypothesis of secular evolution, of a slow unfolding of the globe from a chaotic mass into its organized form, through the action of existing causes, during indefinite time. If any germs of such an hypothesis can be traced in the mundane egg of Orpheus and Aristophanes, the primitive fire and water of Heraclitus and Thales and the speculations of Strabo upon floods and volcanos, they remained buried under dogmatic traditions during the middle ages until they were again brought forth by the early Italian geologists, and at length cast into a more scientific shape. Leibnitz and Buffon fancied the primitive earth a sort of extinguished fragment of the sun with a volcanic nucleus and universal ocean, through whose joint action its seas and continents were formed. Werner and Hutton, as founders of the rival schools of Neptunists and Vulcanists, traced the aqueous and igneous strata to the same causes which are still producing alluvium and lava, though at a rate that would require an immeasurable past. Lamarck and St. Hilaire broached theories of animal transmutation, serving to blend through long epochs the fossil and living species which Cuvier would have broken apart with his successive deluges. Herschel and Poisson, in like manner, sought to transform ancient into modern climates by means of celestial causes of inconceivable slowness, such as a swaying of the earth's orbit and poles in the solar rays, a fluctuation of heat and light in the sun itself, and even radiation among the stars. Babbage and Lyell traced the secular changes of climate and species to more terrestrial causes, such as the decline of the earth's primitive heat and the gradual shifting of the continents by the action

of its crust. Humboldt, bringing these facts together into a comprehensive review, has sketched the progressive stages of our planet as at first a nebulous ring, then an incandescent sphere, and at length a granite shell sustaining between the central fire and solar heat the successive kingdoms of organic life which have flourished and decayed upon its surface. Most living geologists and palæontologists seem to proceed upon some such hypothesis; and by the advanced school according to Professor Huxley, it is held to be not unlikely that the whole development of the globe through all its eras and phases may yet be traced as plainly as the growth of a fowl within the egg.

On the religious side of the same question is the dogma of successive creations, of Almighty fiats calling into being one after another land and sea and sky, reptiles and plants and animals in six days of twenty-four hours, a few thousand years ago. Although derived from the Mosaic Genesis, it is a dogma which has varied its terms with each age of the Church. The early fathers, Clement and Origen, treated the six days as sacred allegories rather than literal epochs. The later fathers Athanasius and Augustine termed them the mere timeless acts of an instantaneous creation, successive only in our thought, and figuratively represented to us as working days measured by sunrise and sunset. The schoolmen, Hugh of St. Victor and Peter Lombard, defined them as miraculous works which might indeed have been performed all at once, as the fathers taught, but in fact were produced successively, in six literal days, as religious lessons of the Creator to His creatures. The Westminster divines also held them to be periods of twenty-four hours, and found their rationale in the seven-fold division of time in six days of work with one of worship. Archbishop Usher, by act of Parliament, fixed the date of Creation on the 25th of October, 4004, B. C., and the learned Dr. Gill particularized the name as well as date of each creative day from Monday morning to Saturday night. Living divines who still follow these different authorities have as yet made no new definitions of the dogma, and for anything that appears in our existing creeds, the interminable strata, floras and faunas which geologists have been unfolding,

are still to be viewed as only so many didactic miracles wrought in a single week.

The destiny of the globe is also becoming a scientific as well as a religious question. It formed part of the ancient faith as matured by Augustine and Aquinas and depicted in the sacred arts, that our earth, having once been cleansed by water for the sin of man, would yet be purged by fire for his redemption, at a given signal when the Purgatory beneath it should send forth its flames. And even some of the early geologists, such as Hooke and Ray, looked upon the earthquake and the volcano as agents, no less than presages, of such a catastrophe. But we are now told, in accordance with the views of Fourier, Thompson, and Mayer, that the earth is already oxidated or burnt through its crust halfway to the core; that it has grown so cool in the course of ages that it could not now melt a layer of ice ten feet thick in a hundred years; and that the lunar tides which act as brakes upon the rotatory motion imparted by its primordial heat must in time cause it to spin more slowly and feebly, until at length it shall flutter upon its axis as a dead world like the moon, ever turning the same pallid face to the sun.

And the remaining question as to the end or scope of the whole terrestrial development at length lands us between the contrasted views of Burnet and Lyell; on the one side that of a miraculous deluge and conflagration of the earth between the epochs of creation and judgment, for the sake of man alone; and on the other side that of vast periodic changes of climate and species as the globe heaves and shifts its continents and seas through the great year of the zodiac, or nods to and from the sun, crowned with verdure and capped with snow every other twelve thousand years, or mayhap journeys with the sun itself among the stars through a sidereal summer and winter, from an igneous to a glacial epoch, between which our rolling seasons are flitting like the brief hours of a summer day.

Anthropology, at this point, comes forward with problems still more complex and momentous, such as the origin of our race, the first appearance of man upon the earth, and the mode of his connection with the organic scale. On the scientific side

of the question rises before us the hypothesis of derivative evolution, of a gradual growth of animal into human species, under organic and climatic laws, long ages ere history was born. It is an opinion which first figured in the mythology of the Greeks and Romans, the speculations of Epicurus, and the satires of Horace, which reappeared in the ironical pleasantries of Monboddo and De Maillet, and has at length in our day passed into a grave controversy of science. Lamarck imagined transmutations of species to have occurred through the long eras and stages of an organic progression, by the instinctive efforts of animals to adjust themselves to new conditions, the stranded turtle growing into the tortoise, the high-browsing camel into the giraffe, and even the upright orang into civilized man. The elder Darwin, the author of the "Vestiges," and Richard Owen, without committing themselves to any theory, held the existence of some purely natural law of organic development to be probable. Hooker and Wallace have at length proposed, as such a law for the vegetal and animal world, the survival of the best or fittest breeds in the struggle for subsistence which is ever going on among the teeming populations of nature. Mr. Charles Darwin, conjecturing that man himself may thus have fought his way upward from the inferior races, has been collecting the inherited proofs of such origin from his embryonic stages, his rudimental organs, and his very physiognomy. Professor Huxley has suggested that even his highest faculties of feeling and intellect may be seen germinating in some of the lower species with which he is most nearly connected. Professor Hæckel declares that, in the course of his organic life, from the germ to the grave, he epitomizes all the successive types of the palæontological scale. And Sir Charles Lyell already looks for his pedigree in the entombed dynasties of nature, among such typical shapes as the proudest nobles still blazon for their crests. It is frequently said that the majority of living naturalists accept the hypothesis in its different forms, or at least the principle upon which it proceeds, and they would doubtless agree with a saying attributed to Schaaffhausen, that the secular transformation of animal into human species, if once proved, could be no more marvelous

to science than the simplest metamorphosis of an egg into a bird or of a child into a man.

On the other side of the same question stands the dogma of independent creation, of an immediate formation of man, out of the ground, in the image of God, on the sixth day of the first week of the world. It has come down to us through various forms of statement, from the earliest comments on the writings of Moses. The rabbins, from the son of Sirach to Philo, delighted to depict the divine image in Adam as reflecting every conceivable perfection of body and mind. The fathers Tertullian, Chrysostom, and Augustine discerned it in his godlike aspect and dominion, in his intellectual and moral faculties, and in a miniature trinity of his body, soul, and spirit. The schoolmen St. Bernard, Lombard, and Scotus distinguished it into that intellectual image which even in Gehenna cannot be consumed, and that moral likeness which he lost by the fall. The later doctors Bellarmin and Suarez described such moral likeness as a paradisaic dowry which he had forfeited, a virginal wreath of which he had been despoiled. The reformers Luther and Calvin, the Puritans Owen and Edwards, re-defined it as a physical, intellectual, and moral likeness which has been wholly lost or marred, and can only be supernaturally restored. No existing body of divines has since thought of retouching these ancient symbols; and at the present moment, while anthropologists on all sides are mining into the fossil flora and fauna coeval with primitive man, our reigning dogmatic conceptions are still as crude and vague as the fancies of sacred artists and poets.

The development of mankind, the rise of races, languages, and arts, is a further question which science begins to share with religion. It has been the traditional faith, from the time of Augustine, that the human species, being potentially folded in Adam, fell with him from Paradise, became whelmed in a universal flood, were renewed from the loins of Noah, and afterward dispersed over the earth by a miraculous confusion of language into nations and tribes, with an ever-lapsing or perverted civilization. And until very lately, scientific anthropologists were retracing all existing races to Shem, Ham, and Japhet; all living dialects to the primitive Hebrew, and all

remaining monuments and traditions to the Tower of Babel. But we are now threatened with a total revolution of these opinions. Ethnologists such as Agassiz, Morton, and Owen have been grouping mankind into indigenous races, through all the hues of climate, from the Ethiopian sable to the rose of Circassia; grading them in distinct classes, by all degrees of the facial angle, from the low forehead of the ape to the profile of the Caucasian; and following them backward from one epoch to another beyond the time of Moses, through all the dynasties of the Pharaohs. Philologists such as Wilhelm Humboldt, Max Müller, and Schleicher have been unfolding human speech into its formative stages, the radical, the agglutinate, the amalgamate; tracing its roots to imitative sounds or natural cries, and even expanding its growth through long eras of fossil dialects, rudimentary letters and phonetic types, between the extremes of animal and human expression, from the chatter of an Australian forest to the comedies of Shakespeare and Molière. Archæologists such as Lubbock, Stevens, and Westropp have been sketching human culture through its pre-historic ages of stone, of bronze, and of iron, from the flint-chip to the steam-engine, from the rude cairn to the marbles of the Parthenon, and exhibiting the savage peoples of the earth in advancing stages, the hunter, the herdsman, the farmer, during long epochs, ere civilization was known. And archæo-geologists, so-called, such as Schmerling, Lartet, and Lyell, have been restoring the flora and fauna of the pre-historic periods, the beech and the horse of the iron age, the oak and the goat of the bronze age, the pine and the reindeer of the stone age, the bear and the glacier of the savage epoch, until at last they have carried the torch into a primeval cavern, among mammoth bones and simian skulls, as the rude birth-place of civilized man.

And the concluding question as to the destiny of mankind, the aim and prospect of the whole human evolution, at length opens two opposite views; on the one side, the prediction of a regenerated race upon the scene of a renovated earth, with the wilderness budding as a rose, the lion transformed into a lamb, and man again an innocent child of paradise; and on the other side, the prognosis of a gradual decline as well as

growth of humanity, when the noblest races shall have lost their ancestral vigor, the richest tongues their classic grace, the finest arts their pristine purity; when even the productive stores and sustaining powers of nature herself shall have been exhausted, and the lingering plants, animals, and effete tribes of men shall fade away like the leaves of autumn, while the earth veers back into her glacial epoch, and the sun can no longer vivify the nations that have basked in his rays.

Problems in the Psychical Sciences.

Our survey has now brought us to the verge of those higher psychical sciences which, as they include the nearest human interests, are bristling with portentous questions, not likely to be treated in that passionless mood which belongs to scientific inquiries, and yet all the more imperiously claiming our attention.

Psychology, at the head of these sciences, is already pressing upon us such problems as the origin, the development and the destiny of the individual, of his cognitions, his emotions, his volitions, and is presenting like divergent opinions; on the one side, such new hypotheses as those of Herbert Spencer, Maudsley, and Moleschott, that mind is a product of matter, that the will is a developed force acting under laws, and that death is the dissolution of that matter, the conversion of that force; and on the other side, such traditional dogmas as those of Lactantius, Augustine, and Jerome, that the soul has been created in the body, that the will may be regenerated by irresistible grace, and that the spirit will be reclothed hereafter with the whole present body.

Sociology is not far behind with such problems as the origin, the development, and the destiny of society; of its arts, its sciences, its politics; and is branching with a similar divergence of views; on the one side, the hypotheses of such civilians as Locke, Vico, and Draper, that the State is a social contract; that the history of nations proceeds under periodic and progressive laws, and that societies, like individuals, physiologically viewed, have their infancy, youth, age and decline; are born but to grow and die; and on the other side, the dogmas of such ecclesiastics as Bellarmin, Bossuet and Ed-

wards, that the Church is an absolute theocracy, that Providence throughout history has been a systematic judgment of the nations on behalf of the Church, and that the nations are yet to be subdued by the miraculous return and reign of Christ.

Theology also is emerging with new problems, such as the origin, the development, and the destiny of religion, of its traditions, its creeds, and its cults, and is already breaking into hostile camps; on the one side, the votaries of mere natural religion, such as Theodore Parker, Max Müller, and Comte, holding that there is one essential, universal faith derived from the light of nature; that there has been a scale and growth of religions in history through degrees of relative perfection, and that the perfect religion of the future will consist in the deification of humanity, the worship of womanhood, and the hierarchy of science: and on the other side, the disciples of revealed religion, such as Leland, Paley, and Chalmers, maintaining that a revelation of religion is necessary as well as important; that there has been a primitive miraculous revelation, of which other pretended revelations are but corruptions or counterfeits, and that this revealed religion is destined to prevail over all other religions by supernatural conversions and judgments at the end of the present dispensation.

And the general question to be gathered from all the psychical sciences at length presents to us on the one side the opinion that the regenerate soul, the Church, and the coming millennium are parts of a new spiritual system ensuing upon the old material creation, and on the other side, the conjecture that religion, science, politics, art, all were once potential in the flames of the sun, and must yet revert to the fiery cloud from whence they sprang.

Problems in the Metaphysical Sciences.

Behind these problems of the physical and psychical sciences are others still more recondite and abstruse, the metaphysical questions as to the essential nature of mind and matter, and the absolute reality before and beneath all phenomena; questions which on the one side have at length issued

in the opinions of Herbart, Lotze, and Fechner that phenomena, both material and spiritual, are the expressions of real essences or conscious monads, or self-manifesting souls; together with the extreme speculations of Hegel, Shopenhauer and Hartmann, that the intelligible universe is a logical process of absolute reason and thought, or a product of blind primordial force and human will, or a historical development of unconscious force and will into conscious thought and reason: questions which, on the other side, have scarcely advanced beyond the ancient dogmas, that body and soul are but distinct substances co-acting as instruments of divine purposes, and that there is a trinity of Father, Son, and Spirit in the self-existent Jehovah manifested to us through the miracles of creation, incarnation, atonement, and final judgment. At the same time, as the issue of modern metaphysical thought, we have at the one extreme an optimism which seeks to identify the revealed Jehovah as the one Absolute Reason, the first and final cause of a perfected creation; and at the other extreme, a pessimism which would exhibit the developing universe as an abortive paradox, beginning and ending in hopless contradiction.

And high above all these problems in the different sciences we may now behold the great summary question as to the course and goal of the sciences themselves, as to their logical processes, their historical laws, and their ultimate limits. On the one side we have the decisions of Bacon, D'Alembert, Comte, Mill, and Spencer, that positive science is restricted to facts and their laws without inquiring into their first and final causes, that the more advanced sciences have historically reached this positive state only by excluding all inquiry into causes, and thus outgrowing and destroying theology and metaphysics, and that their final goal is sheer nescience or the recognition of an unknowable reality as the ground of all knowable phenomena. On the other side we have the opinions of Tertullian, Aquinas, Calvin and Butler, that the unknowable to man is revealable by God through miraculously attested communications, that it has been the function of such revelation to remedy human ignorance and expose false science, and that ultimately all earthly science for the

individual will be lost in beatific vision, and for the race will be eclipsed by the millennial light of a new apocalypse.

Such then is the present state of the sciences. While they embrace immense bodies of exact knowledge, too vast for any one mind to master, too magnificent for even the imagination to depict, they also present a bewildering mass of unsolved problems with opposite hypotheses and dogmas respecting them which have been held by the master-spirits of former times and which still engross the leading intellects of our day. Renewing the remark with which this chapter began, that the aim has been simply to state these questions with all fairness and not to discuss them, we shall now submit some deductions from the survey, which seem almost to lie upon the surface in full view of all parties.

In the first place, it is plain that these questions are not purely scientific. They have not been so treated in past ages, and they are not so treated at the present day. No competent scientific authority has yet pronounced upon them. The British Association has not decided them. The French Academy has not decided them. The different Italian, German, and American associations have not decided them. There is not even any spontaneous concurrence of scientific men respecting them, such as that which attends all observed facts, ascertained laws and approved theories. It cannot be claimed that the great names in science have ever been, or are now, arrayed against the religious view of them. And it is not too much to say that they can never be decided by any merely scientific process. The origin and destiny of nebulæ, suns and planets, of man with his individual, social and religious interests, of the universe through all its eras and phases, are surely problems which, by no inductive search among existing facts and laws, can be fully brought within the revision and prevision of science, but must sooner or later, as her most loyal votaries are now confessing, lead her to that verge of the knowable where her torch becomes quenched in the unknowable and she has no more light to shed.

In the second place, it is also clear that these questions are

not merely religious. If they were so treated in former times, they are not so treated to-day. The religious authorities which have ventured to pronounce upon them have not settled them. The Papal Syllabus has not settled them. The Evangelical Alliance has not settled them. The different ecclesiastical councils have not settled them. There is not even such general agreement of religious people concerning them as that which belongs to the chief essentials of the Christian faith. It cannot be held that the great names in religion have always been or are now joined together against the scientific view of them. And it is safe to say that by no purely religious method can they be ever settled. The attempt of all churches and sects combined, through any mere grammatic interpretation of the Holy Scriptures, under pretense of infallible guidance, and in contempt of all other means of knowledge, to show how the heavens and earth and man were created and will be renewed, would simply remand religion to the superstition and bigotry of the dark ages, and at length, as her most devout disciples will admit, dim her light at the very points where it should shine most brightly.

In the third place, it will follow that these questions, being partly scientific and partly religious, are strictly philosophical, and should be so treated by all parties. That they are partly scientific and partly religious is a fact that runs through all the past. From their very origin they have involved both elements. The history of neither could be written without that of the other. The successive conflicts and alliances of the scientific and religious classes at the great epochs of civilization, among the Sophists, among the Fathers, among the Schoolmen, among the Reformers have been the very rhythm of human progress. There is scarcely a dogma which has not served as an hypothesis in science, as there is scarcely an hypothesis which has not been used for a dogma in religion. The great names in each, or at least the masters in both, have ever striven to keep them together rather than to drive them apart. Plato and Origen, Augustine and Erigena, Albertus and Roger Bacon, Francis Bacon and Butler, from age to age, have illustrated their essential oneness. It could be shown, indeed, that the largest minds on both sides have long per-

ceived, that their own peculiar processes and exigencies soon bring them face to face in the mutual recognition of knowable facts which the one must discover and of unknowable realities which the other must reveal. And the common ground between them, formed by their intersecting spheres, instead of narrowing has been enlarging with the lapse of time and the growth of knowledge, until now it has become not merely a conspicuous arena in the philosophical world, but even a field of popular discussion.

Of this fact there could scarcely have been a more striking proof than the recent brilliant and lucid address of Professor Tyndall from the chair of the British Association—an address widely and justly praised, as well for the graces of its style as for the vigor, acuteness, and breadth of its thought, the elevation, courage, and candor of its tone. That the questions which it broaches could be so discussed and received in a scientific body, would be a full vindication, were any needed, of their fitness to such occasions. It is right that the most cultured intelligence of the age should be concentrated upon them, if only they are held under the dry light of pure science within the purview of philosophy. How to adjust them has indeed become "the problem of problems at the present hour;" and that, not merely that we may "yield reasonable satisfaction to a religious sentiment in the emotional nature" (for with this science may have little to do), but also, and chiefly, that we may meet a logical demand of the understanding, a crowning want of the intellect of man.

Perhaps the true philosophical nature of the problems which have been stated could not be better illustrated, for the present purpose at least, than by means of the rhetorical device so skillfully employed in that paper. A disciple of Lucretius, it will be remembered, is supposed to have engaged Bishop Butler in an encounter of wits over one of the chapters of his immortal Analogy; the combatants having been armed with the added knowledge of our time, like Milton's embattled angels, to dare an argument of mysteries. It is easy to paint portraits to suit ourselves while we hold the pencil, and there is always some risk of unfairness when speaking of another. But we may avoid such dangers by simply fancying the two

disputants to reappear at the point which their discussion had reached, and allowing them to proceed with it a step further toward its logical issue. Let the Bishop speak first, and the disciple of Lucretius shall have the last word.

"Before we leave this subject of living agents, most noble Lucretian, I beg to remind you that there is involved in it a very interesting question which you have scarcely touched upon. You will remember that my whole argument had reference not so much to the nature of the living agent or self, as to its destiny. I was trying to prove inductively, from observed facts, that our survival after death is as probable, if not as certain, as any other scientific prevision attempted under like conditions. Beginning with these two great presumptions or high probabilities upon which all positive science proceeds, the uniformity and continuance of nature, I argued that we shall continue to live hereafter, unless it be imagined that death, of which we know nothing, destroys us; and against this mere imaginary presumption I brought forward various scientific presumptions afforded by observation and experience, such as the following: That if death means, as you affirm, the dissolution of your atoms, then your essential bulk may be such that you cannot be dissolved, like that infinitesimal germ out of which has been developed your whole present self, together with the inherited traits of your ancestors: That already most of your atoms have been dissolved and replaced every seven, ten or twenty years, not merely bones, tissues, nerves, but the brain itself, dying a thousand deaths: That large portions even of your yervous atoms might be dissolved without being replaced and you still be conscious of your phantom limb, or go on thinking with but half of your brain: That through all these dissolutions, that hidden self of yours, picture it as you will, persists and survives, with its peculiar powers of thought and feeling, whatever they may be, even amid disease, injury and madness itself: That after the last more rapid dissolution, sooner or later, should you recover that mysterious consciousness of which you have spoken as coming and going so strangely, in some new etherial organism as unlike its old counterpart as that god-like form was itself unlike its earlier

icthyic germ, or as the brilliant insect is unlike its cast-off larva; some spiritual body, wholly imperceptible by our present senses, yet itself gifted with more than microscopic insight, locomotive swiftness or telegraphic thought; all these marvels would be no greater than are daily passing before your eyes: That though existing plants and animals, having shown no such power of individual progression, should perish with their species and be replaced by other and fitter forms in that second state into which you had been born—

> 'With all the circle of the wise,
> The perfect flower of human time,'

yet even this would be only such meet survival as now separates us from primeval ferns and dragons, a just predominance of the higher over the lower forces in the planetary life, a strictly cosmic birth, as free from miracle or catastrophe as the coming of an infant into the world or the transformation of the earth in Spring; in a word, 'as natural as the visible known cause of things.'

"You will observe that this argument, in its nature, is a mere scientific hypothesis, and not a religious dogma. I have carefully excluded from it any theological, metaphysical or even ethical opinions which might seem to prejudice it in your eyes. You may have your own opinions upon such points, and the argument will still hold. You may picture yourself as the merest combination of atoms that the materialist can conceive; but I have shown you that the dissolution of our 'gross organized bodies would not be our destruction; even without determining whether our living substances be material or immaterial.' You may imagine that combination of your atoms to have been as fortuitous as any the atheist can trace; but 'that we are to live hereafter is just as reconcilable with the scheme of atheism, and as well to be accounted for by it, as that we are now alive is; and therefore nothing can be more absurd than to argue from that scheme that there can be no future state.' You may even discard the moral motives of such a state for any humane virtues that the secularist may practice, as 'if it were certain that our future interest no way depended upon our present behaviour;' yet, 'curiosity could not but sometimes bring a subject in which

we may be so highly interested to our thoughts, especially upon the mortality of others or the near prospect of our own;' and it is in the light of such mere curiosity, as a question of pure science, that I have put it before you, to be tested as coolly as you would dissect an embryo or a chrysalis."

Lucretius, if history speaks truly, was not the man to shirk a question because of its logical consequences, and we can fancy without much effort what sort of rejoinder a true Lucretian would make to the Bishop's reasoning.

"I have listened," he might say, "to your ingenious argument with the interest of a philosopher. It bears upon a subject which engrossed some of the finest minds of Greece and Rome, from Socrates and Plato to Cicero and Seneca. It was not, you are aware, the doctrine of Epicurus, nor that which I learned from my master. He taught me that from atoms all things have come, and to atoms they must return. Through their endless compositions and decompositions the forms of beast, bird, and flower appear and disappear, come and go, and are seen no more. Even the etherial and luminous particles of the soul itself, together with the grosser body through which they are diffused, must scatter and vanish like down before the wind. Death is therefore the mere dissolution of our own peculiar atoms, and there can be nothing to survive the disintegration of the body.

"And this theory he framed for the purpose of counteracting certain dogmas which dominated in his time. He saw men everywhere terrified with omens and disasters, which they attributed to the anger of the gods, and in order to dispel their fears, depicted those ideal beings in a remote heaven of apathy, sublimely indifferent to mortals, while nature moved on beneath, with her measureless surges of atoms, majestically as the roll of his own hexameter. He found his countrymen wasting their best days in alternate dread and hope of Tartarean torments and Elysian raptures, and admonished them that the truest and highest virtue would scorn such selfish motives, and only look for the reward of duty in a tranquil enjoyment of the present life. And that other remaining terror of death, which was ever shading their path, he stripped before them into an empty negation as

the mere loss of life, the last atomic thrill with which to glide into the passionless calm of the gods. He lived about sixty years before the Christian era. As I have explained to you, he died in the faith in which he had lived, and by his own tragic fate illustrated his creed as he stood, in the prime of life, at the height of his fame, about to execute that purpose from which the more irresolute Hamlet quailed:

> 'And therefore now
> Let her, that is the womb and tomb of all,
> Great Nature, take, and forcing far apart,
> Those blind beginnings that have made me man,
> Dash them anew together at her will
> Through all her cycles.'

Now I do not say, I have not said, that I adopt these theological and ethical opinions of my master, though they were essential parts of his system; but if I should lay them aside, as you have laid aside yours, there would then remain this mere hypothesis before us to be tested like any other by the facts. And it strikes me simply as a strong physical analogy which still lacks confirmation. Let me show you how far I might go with you. You have proved that death may be but the birth into another life, that there is nothing improbable in a future state into which we may pass, 'just as naturally as we came into the present.' Seneca surmised as much when he likened those who look for a future life to children in the womb preparing for this world. You have also projected into the future newer and higher organic types beyond those which, from the mollusk up to man, have been unfolded in the past. Such attempted prevision cannot seem wholly unscientific to a Lucretian, who believes it would have been possible 'from a knowledge of the properties of the cosmic vapor to have predicted the state of the fauna of Britain in the year 1869 with as much certainty as one can say what will happen to the vapor of the breath on a cold winter's day.' Nor have we any right 'to assume that man's present faculties end the series,' which has extended all the way 'from the Iguanodon and his cotemporaries to the Presidents and members of the British Association.' But at this point the difficulties begin. You have not supplied all the

intermediate links in your ideal scale between our future and our present organized selves. You have not shown the one evolving out of the other, the higher out of the lower. You have not exhibited that coming psychical body as originating among the spaceless atoms or punctual forces or plastic processes of the present organism, nor exposed to view the germination of its peculiar faculties and powers. You have not proved the capacity of existing earth and man to produce such spiritual bodies. You have not determined whether the interval between them and us will be brief or long; whether they will recover consciousness soon or late; whether they will be developed slowly or in a moment. In a word, the evidences of such a metamorphosis cannot be gathered from the existing state of knowledge, and if immediately forthcoming would appear little short of miraculous. Upon one point, however, we are agreed. You concede to science those rights of unrestricted search and free discussion which have been so hardly won in 'the progress of learning and of liberty.' That is all I ask. And I beg to assure you that in the event of any other trustworthy proofs of a future state being produced, it would be no bar to the theory even in the view of a Lucretian, that it should be found coincident with the Jewish and Christian prejudices of an honored prelate whom no one admires more than I do. On the contrary, to receive and act upon it, at least as a working hypothesis, would be but the dictate of Greek wisdom as well as Roman virtue."

Leaving these somewhat prejudiced opponents, let us now turn to another historic personage, accepted by them and by us all, with the concurrent voice of more than two centuries of trial, as an umpire,

> "Whom a wise king and nature chose
> Lord Chancellor of both their laws."

Francis Bacon was neither a mere scientist nor a mere divine, but a civilian and a philosopher who embraced within the view of his judicial intellect the most advanced science and the best divinity of his time. He projected and partly constructed a magnificent "Instauration of the Sciences," which

was designed to include all existing knowledge, both divine and human, in one comprehensive system. May we find any decisions of this high authority that will bear upon the controversy?

At one moment, indeed, he seems to lean toward the side of Lucretius. Having spoken of a sensitive or produced soul, which he describes as derived from the elements, and common to man and the brute, he urges more diligent inquiry into its faculties of voluntary motion and sensibility, and as to its nature, distinctly allows it must be material, "a corporeal substance, attenuated by heat and rendered invisible, as a subtile breath or aura, of a flamy and airy nature, diffused through the whole body, but in perfect creatures residing chiefly in the head and thence running through the nerves, being fed and recruited by the spirituous blood of the arteries, as Telesius and his follower Donius have usefully shown."

At another moment his judgment is on the side of Butler. Superadding to the sensitive or produced soul that rational or inspired soul which proceeds from the breath of God, and distinguishes man from the brutes, he concludes that "inquiries with relation to its nature, as whether it be native or adventitious, separable or inseparable, mortal or immortal, how far subject to laws of matter, how far not, and the like—though they might be more thoroughly sifted in philosophy than hitherto they have been—in the end must be turned over to religion for determination and decision; since no knowledge of the substance of the rational soul can be had from philosophy, but must be derived from the same divine inspiration, whence the substance thereof originally proceeded."

At the same time, he is careful to vindicate such a method of turning the scale by Scriptural authority as still consistent and just to both parties: "We would not have borrowed this division from divinity, had it not also agreed with philosophy. For there are many excellencies of the human soul above the souls of brutes, manifest even to those who philosophize only according to sense. And wherever so many and such great excellencies are found, a specific difference should always be made. We do not, therefore, approve that confused and pro-

miscuous manner of the philosophers in treating the functions of the soul, as if the soul of man differed in degree rather than species from the soul of brutes, as the sun differs from the stars, or gold from other metals."

And this is but an example of the general manner in which the great acknowledged master of philosophy would treat that whole class of scientific and religious problems which we have described as connected with the origin, course and destiny of nature.

Now, he yields to science all it can claim, as he argues so eloquently that the inquiry for final causes is wrongly placed in physics, and hath made a great devastation in that province: "And, therefore, the natural philosophies of Democritus and others, who allow no God or mind in the frame of things, but attribute the structure of the universe to infinite essays and trials of nature, or what they call fate or fortune, and assign the causes of particular things to the necessity of matter without any intermixture of final causes, seem, so far as we can judge from the remains of their philosophy much more solid, and to have gone deeper into nature with regard to physical causes, than the philosophy of Aristotle or Plato; and this only because they never meddled with final causes, which the others were perpetually inculcating."

Again, he reserves for religion all that it demands, while he shows that final causes, when kept where they belong within the bounds of theology and metaphysics, are not repugnant to physical causes, but agree excellently with them as expressing the intentions of Providence in the consequences of nature: "But Democritus and Epicurus when they advanced their atoms were thus far tolerated by some, but when they asserted the fabric of all things to be raised by a fortuitous concourse of these atoms, without the help of mind, they became universally ridiculous. So far are physical causes from drawing men off from God and Providence, that, on the contrary, the philosophers employed in discovering them can find no rest but by flying to God and Providence at last."

And when we inquire how these two adjacent provinces are to be preserved and adjusted, we may hear him discoursing of a Primary Philosophy, or mother of all the sciences,

by whom they are to be cherished, and around whom their wrangling sisterhood is to be gathered in harmony. His conception of such a philosophy may seem crude and vague, but not more so than might have been expected in that age. In fact he is inclined to note it as still wanting; and in terms that almost exactly describe the exigency upon us at this hour: "For I find a certain rhapsody of natural theology, logic and physics, delivered in a certain sublimity of discourse, by such as aim at being admired for standing on the pinnacles of the sciences; but what we mean is, without ambition, to design some general science, for the reception of axioms, not peculiar to any one science, but common to a number of them."

The three personages before us have thus illustrated the claims to which they respectively belong, and the interests which they represent. Philosophy, in the best sense of the word, is the umpire between science and religion. As originally defined by Pythagoras and Cicero, it is itself the science of things divine and human, together with their causes. As that academic faculty which is complementary to the others, it includes whatsoever is common to both the secular and sacred departments of learning. As the science of knowledge, it aims to ascertain inductively the validity, the limits and the functions of reason and revelation, the two great correlate factors of knowledge. As the science of the absolute, so called by the Germans, it takes within its scope both the finite and the infinite, both the knowable and the unknowable, for the respective provinces of reason and revelation. As that summary universal science of which Bacon speaks, to which all the rest are tributary, it receives and cherishes impartially and equally the discovered and the revealed bodies of knowledge, that it may organize them into a rational system. And finally, in the most common and literal sense of the word, as the love of wisdom, Philosophy, while including and fostering the scientific and religious qualities of curiosity and reverence, over and above these retains others more peculiar to herself, such as that power of abstraction, that insight into reality, that catholicity of view, that unquenchable craving for unity of truth and symmetry of knowledge, which are not so likely

to be practiced by the mere scientist, or mere religionist, so long as he is immersed in his own special researches, and which yet easily come to them both, the moment they step into her wider sphere.

It is to be regretted that a prejudice should exist in some minds against a word of such noble significance, and all the more as it is only in rare cases that its true meaning would be repudiated. Though a few scientists and religionists may now and then have denounced philosophy as speculative or rationalistic, yet the great mass would simply resent the imputation of being unphilosophical, as an insult to their understandings. There is plainly a good and valuable sense of the term which both parties spontaneously unite in using, and which ought not to be sacrificed in any mere logomachy, so long as we have no better word to express it. If we would characterize a lover, seeker and reconciler of all truths, both natural and revealed, we must term him a philosopher. If we would describe that special work which is to be done in adjusting the relations of religion and science, in ascertaining and defending their respective spheres and prerogatives, in devising and applying logical rules to their pending controversies, in sifting their several portions of truth from error, and combining them into a harmonious system—we can only speak of all this as a peculiar intellectual task belonging neither to religion alone, nor to science alone, but to their common ally and friend, philosophy.

Religion alone could not furnish the needed umpire. Concede to the utmost her high prerogatives: grant that she stands upon the authority of a divine revelation and that for its interpretation she has an equally divine illumination in the whole Church and in each believer; yet that revelation, by its own self-prescribed limits, is found to exclude her from the legitimate fields of science, and that illumination renders neither her public nor private judgment infallible in scientific researches. Has she revealed to us the laws of matter, motion, force, heat, light, electricity, or life? Will she make sages of her saints and inspire her priests with science? Can she, by any mere sacred penetration, outstrip the slow process of induction and unfold the endless secrets of nature? As soon

as she flies against facts, in her maintenance of doctrines, does she not suffer for the trespass? And has not her whole history shown that, when exclusively pursued, her very virtues through excess have bred moral habits unfavorable to physical investigations? that her reverence has degenerated into superstition, her faith wandered into mysticism, and her zeal flamed into intolerance, until she has been ready to spurn away all science as alien or heathen? And while in such mood will she even deign to appear at the bar of reason? It is but too obvious that, as to any scientific questions or any religious questions involving scientific facts, the mere religionist would be no fit arbiter.

Science alone could not furnish the needed umpire. Concede all that she can justly claim; grant that she proceeds upon a basis of facts and that her process is unerring in attaining actual knowledge; yet that knowledge, bounded as it is by the limits of reason, until supplemented by revelation, can never extend to the transcendental realms of religion. What can she tell of the nature, character and policy of the Creator, of the origin and object of the creation, of the duty and destiny of the creature? By what rash generalizations from facts to principles, "like Pelion upon Ossa piled," can she climb into that empyrean of divinity? The moment she trenches upon revealed doctrines, does she not betray her weakness and bewilderment? And has not her whole history shown that, when exclusively pursued, she has only engendered mental habits which are unfavorable to spiritual inquiries? that her reliance upon the senses has tended to materialism, her caution run into scepticism, and her pride of knowledge begotten irreverence, until she has scoffed at all religion as mere superstition or delusion? And while in such temper, will she even be admitted within the purlieu of revelation? It is manifest that, as to any religious questions or any scientific questions involving religious truths, the mere scientist would be no fit arbiter.

Philosophy, at least, is the actual, the accepted umpire. The two parties have ever in fact, even though without concert, practically owned her jurisdiction, and sought to justify themselves to each other in her view. It has been their aim

to show that in being scientific or religious they mean to be also philosophical, to sacrifice no essential portion of the whole truth, and do no outrage to that common reason without which we can judge neither of the evidence of religion, nor of the claims of science. Instinctively they have appealed to her, in every great crisis of free thought, to guard and vindicate at once the authority of revelation and the rights of reason. And this unconscious tribute has been more than repaid. To her, from the days of Justin, the first apologist, religion largely owes its evidences, its defences, its appliances; to her, since the time of Aristotle, the first great logician, science is mainly indebted for its methods, its rights, its triumphs; and at this moment, in spite of their conflicting partisans, under her mild umpirage, whatsoever the one can establish as truly revealed, and the other as actually discovered, will be spontaneously accepted by them both.

Philosophy, too, is the only available umpire. If we wished it otherwise we would wish in vain. The moment the two parties come into collision, it is found that neither can impose its own terms upon the other. Paramount as religion must be in her own sphere with her inspired Bible and her illumined Church, yet scientific men will not accept from mere religionists a judgment upon their theories; and paramount as science must be in her own sphere, with her unerring methods and unquestionable facts, yet religious men will not accept from mere scientists a judgment upon their doctrines. Neither party will be acknowledged as a competent and disinterested judge of the questions in dispute. Neither can afford from its own one-sided position a calm and full survey of the whole field of controversy. The rival claimants must leave their different spheres, though without sacrificing them, and, for the time at least, appear in some middle outside province which shall be equally removed from their respective prejudices and temptations, where the whole truth shall be sought and prized as truth alone; and for such a province we have no better name than philosophy. If at that only possible tribunal, either could prevail against the other, so far as we can see (without some miraculous interposition for which we have no right to look), religion would degener-

ate into superstition and science into imbecility; but being there legitimated and reconciled, they will join hands as twin daughters of God and lovers of man.

Philosophy, moreover, is the one desirable umpire. It is best that the two parties should agree to treat the mixed problems rising between them as properly philosophical, rather than merely scientific or purely religious. Their attempts to settle them apart, each by its own method, have brought upon us overwhelming evils. If the time once was when the religious class was unfolding a whole cyclopedia of science out of the Scriptures, from Genesis to the Apocalypse, as pure dogma and mystery of faith, yet the time has now come when a few, at least, in the scientific class are exhibiting a new genesis and apocalypse of religion as the sheer product of science and speculation. And it is high time—we may venture to say in the name of the great body of sober and fair minds on both sides, who refuse to commit themselves to such wild extremes—that the two antagonists, on thus emerging from their respective provinces into the broad plain of philosophy, should learn to respect their common rights and interests, and not imagine that either can claim the whole field against the other. It is time the religionist should recognize that immense mass of facts, theories, hypotheses, which is the fruit of two thousand years of research, which stands upon foundations of proof that cannot be shaken and is rising into a superstructure of knowledge too vast even to be conceived. It is time, too, that the scientist should cease to ignore that vast body of truths, doctrines, dogmas, backed by evidences which have been accumulating for eighteen centuries under the most searching criticism, which have more than convinced the great master minds of the past, and which are mounting every hour with cumulative probability toward moral certainty itself. And when at length both parties meet face to face, as they are now meeting before the final problem of the universe, it is time for the one to admit that the processes of creation have not been revealed, and cannot, by the most exact criticism, the most profound exegesis, the most systematic divinity, ever be discerned in the mere letter of Holy Scripture; and for the other to perceive that the theory

of a Creator, anthropomorphic as it may appear, still keeps the field, still satisfies an immense number of scientific minds, and is not likely to be abandoned even by the most advanced scientists, until something else or something better has been offered in its place. Only when they have thus taken philosophical views of the whole range of knowledge will they cease their raids upon each other's territory, and no longer maintain hostile barriers or hollow truces within the domain of truth. In the realm of philosophy alone can they meet and find their needed mutual support, completion and harmony.

Philosophy is, in fact, herself impelled by her own high instinct to seek their reconciliation. It is that last crowning problem which remains for her to solve. A scientist, as we have seen, may hold his scientific hypotheses in antagonism or indifference to religious truth and still be a good scientist, or a religionist may hold his religious dogmas in opposition or indifference to scientific facts and still be a sound divine; but the moment either would intelligently combine religious truths with scientific facts, he becomes something more and higher than any mere specialist, content with his own fragmentary knowledge and opinions; something more than any mere scholar, who amasses crude learning; something more even than a logician, who reasons conclusively; he is also and pre-eminently a seeker of truth, a lover of wisdom, a philosopher; and in so far as he can truly claim that title he will not rest satisfied until he has found all truth and wisdom, embraced both religion and science within his view, and rendered them consistent and harmonious.

The reconciliation of Science and Religion is not only a distinctive problem of Philosophy, but precisely that one chief problem by the solution of which her own function is exhausted, her goal attained, her mission accomplished. In establishing the validity of human reason, in maintaining the authority of divine revelation, in logically combining them as coördinate means of knowledge and pouring their blended light upon all classes of facts, she is but fulfilling that sublime ideal towards which her followers from age to age have been struggling with unquenchable hope and courage. The one

last perfect Philosophy is to be sought and can only be found in the demonstrated harmony of Science and Religion.

It should be carefully observed, at this point, that no disparagement of any one of the three interests, certainly no exaltation of science over religion, or of philosophy over either, is implied in this definition of their related provinces. An umpire is but the servant of the game that he watches, making neither the laws nor the facts, but simply applying the one to the other. And that only true philosophy which seeks to embrace both science and religion in their normal relations must itself be predetermined and limited by them. Any attempt of the philosophic spirit to intrude into their domains with the view of distorting scientific facts or religious truths for mere speculative purposes, can only issue in confusion and evil. The so-called philosophies of Nature, such as those of Schelling and Oken, which aim to construct hypothetically the material universe without full empirical research, as well as the miscalled philosophies of religion, such as those of Hegel and Comte, which seek to prejudge the powers and relations of the Absolute Intelligence without regard to its actual expressions, are alike vain attempts of the mere reason to dispense with experience and revelation. And the would-be philosophers who aspire to conciliate the scientific and the religious spirit without any practical acquaintance with either, are only sure to fall under the contempt of both.

As little would it follow from the proposed definition, that the philosophical spirit must needs be organized in some visible tribunal, issuing authoritative decisions. The scientific spirit does not thus reach its results through any of the mere institutions or associations which embody and express it; and the religious spirit, though incorporated in churches and councils and claiming the authority of an infallible Scripture, does not command universal agreement. It is the crowning misfortune of the present crisis, that neither the disciples of religion nor the votaries of science are united in their respective interpretations of the Bible and of Nature, but appear divided among themselves, as well as opposed to each other, by endless hypotheses and dogmas, throughout the entire field of research. And yet, as there must still be such a thing

as true science and true religion amid all the schools and the sects, so there may be a true philosophy ever discriminating and mediating between them and a hidden fraternity of philosophers more or less consciously striving to bring them into harmony.

It seems scarcely necessary to add that there can be no invidious distinction of classes in the pure democracy of intellect. The philosophic class is but recruited from the scientific and religious ranks, and can neither exist nor flourish without them. Any one joins it who pleases, stays in it as long as he chooses, and falls or rises by his own merit. None need to enter it who feel, as at times we all feel, that life is full enough of problems without adding to their number. Some may prefer to seclude themselves within their own provinces, to which they are wedded with the zeal of a votary. Others may make chance excursions beyond them, only to retire as quickly to less debatable ground. Still others may even accept conscious contradiction rather than open conflict, resolutely holding the sternest creed with the strictest science, like the great Faraday, of whose laboratory and oratory it has been said, that he never entered either without shutting the door of the other. But the days for such a state of parties seem to be passing away. The trumpet of a new campaign has been sounded. Combatants have been marshaled, and the lines are forming. When scientific and religious bodies have already begun to discuss the same problems from their opposite points of view, there can only be warfare or agreement. And in such a crisis, it is easy to see that the honors are more likely to go to those who are championing the extreme wings of philosophy than to any that may be so brave or so rash as to risk the cross-fire between them.

In concluding this argument, it may be well to notice some of the objections which might be brought against it, and which have actually been suggested in various quarters, since it was first presented in a memoir read before the Philosophical Society of Washington.

There is a practical, though not very pertinent objection derived from the relative importance of the truths of religion

and of science. It has been well said by Butler, in reply to such invidious distinctions, that we are not competent judges of what knowledge is best for us, and that in fact scientific knowledge is of the greatest consequence to man; and it was one of the latest sayings of Agassiz, that all science is sacred and nature itself a sort of holy scripture. But if it be granted that religious doctrines, as commonly understood, are infinitely more momentous than existing scientific verities, when viewed in a practical light, yet this is not precisely the aspect under which they appear to the philosopher. It is but a truism to say that all truths are equally true, whether scientific or religious, and to raise the question of their comparative value is irrelevant and unseasonable, when the chief business is the search for truth itself as truth and for its own sake, though, if once in the grasp, it will indeed prove no worthless guerdon, but the sovereign good of human nature.

There is also a covert fallacy upon which many proceed in denying the fact or need of any such umpirage, any such conciliatory office between existing science and religion, as has been described under the name of philosophy. Apparently, they would leave their respective partizans to fight their way into defeat or victory, like two belligerent powers between whom neither peace nor truce is possible. To borrow an inadequate illustration from the political sphere, it is as if it should be thought better for England and the United States to have rushed into an unnatural war than to have submitted their relative claims to an international tribunal; or wiser for two great parties to have become embroiled in terrible anarchy than to have consented to the recent Electoral Commission. Even if the reconciliation of religion and science be viewed as a question of degrees, that philosophy which would adjust them partially and problematically would be nobler and safer than a mere aimless strife and confusion between them, and all such scruples must vanish, if it be shown that the true, ultimate philosophy, as the great debate proceeds, will involve a growing vindication of truth against error by means of divine revelation as well as human reason.

Of more strictly logical objections deserving attention, the first is that the philosopher is supposed to approach the sub-

ject with foregone conclusions in respect to some of the most important questions involved in the debate. This may be so. Why should it be otherwise? Before the debate can proceed intelligently, there are certain preliminary questions which must and ought to be settled, and which can only be settled, as we have maintained, by philosophical minds. If, for example, the evidences of the Christian revelation should be found insufficient, it would be unphilosophical for a theologian to appeal to that revelation as a source of knowledge in debating with a scientist; but if they are found sufficient, it would be unphilosophical for a scientist to reject or ignore that revelation in debating with a theologian. And until this primary question has been decided, any further debate in respect to other questions would not only be unphilosophical in both parties, but also useless. The whole field of natural theology and the Christian evidences logically precedes all questions between the Bible and Science. Surely something ought to be considered settled as the great debate proceeds, or we shall only be ever returning upon our tracks to the point from which we started. Moreover, it should not be forgotten that the only parties that can be supposed to need or accept reconciliation are the scientist and the religionist, not the atheist and the theologian, not the infidel and the Christian, who could never agree and preserve their distinctive characters. Scientists, as such, are not atheists and infidels. On the contrary, the simple fact is that as a class they have never repudiated the authority of a divine revelation, but only some human dogmatic interpretation which has been substituted for revelation, and often thrust forward into their domain as if it were itself the infallible word of God.

A second objection is, that it is assumed that specialists are not capable of drawing inferences from the facts of their respective departments. History too plainly shows that this assumption is safe and wise in reference to the theological, as well as the scientific specialist. Luther, Calvin, and Turrettin inferred from the facts of their department that the sun revolves around the earth, and bitterly denounced the Copernican theory as a heresy. And no wonder. It seemed to them to impugn the very veracity of Scripture, to tear the

earth reeling from its center, and revolutionize with it the whole existing doctrine of heaven and hell. It would probably have been harder for us to accept that hypothesis then, than it would be for us to accept the development hypothesis now. They simply drew their own special inferences from Scriptural facts, as too many are still doing, and the result was a humiliating defeat from which we have not yet fully recovered. And this is but one among other instances showing that the most devout and orthodox divines in dealing with religio-scientific questions are not only liable to err, but likely to err, if they refuse to allow philosophers to compare their dogmatic views of Scripture with the ascertained facts of nature, or what amounts to the same thing, if they decline themselves to take such a philosophical position.

A third objection is, that the special work assigned to the philosopher may be done by either the scientist or the theologian. In a guarded sense, and to a limited extent, this is true. Although the reconciliation of science and religion cannot be accomplished by any one mind, or single generation, yet every true philosopher contributes something to the process, even though, in other spheres and relations, he were also a scientist or a theologian. But it is only when acting as a philosopher that he can properly be said to join in that work. The moment he should appear in the high debate avowing any other character and purpose, as a mere scientist or as a mere theologian, he would be universally challenged for an incompetent witness, or a professional advocate. It is true that the most interested witness, or the most vehement advocate in one case might become a competent judge in another case, and there find himself obliged by the facts and the laws to decide against his own cherished impressions or prejudices. And so an exact physicist or a zealous apologist might exchange his special aim for the more general task of a philosophic seeker after absolute truth in regions of thought and research, where both nature and Scripture would compel him very seriously to modify his favorite hypotheses or dogmas. It is also true that the mass of divines and savants are likely to remain mere specialists, wedded to their chosen pursuits; and yet, in every science, there will always be some

whom the philosophic passion impels to take a more encyclopædiac range, with the dauntless hope of reducing the mass of truth and knowledge to unity and harmony. If this is all that is meant by saying that "the special work assigned to the philosopher may be done by either the scientist or the theologian," it is only a variation of our own statement, that "the philosophic class is but recruited from the scientific and religious ranks, and can neither exist nor flourish without them."

A fourth and last objection is found in the fact that no satisfactory results would be reached in practice, if by the umpirage of philosophy is meant the arbitration of fallible men of like passions with our own. But there is a manifest difference between any contemporary philosopher and that great historic personage who has been universally accepted as an authority after more than two centuries of trial. And it should also be observed that we have distinctly precluded all reference to any visible tribunal issuing authoritative decisions. After using the rhetorical device of Professor Tyndall as a mere illustration, we have described the vast social process of reconciling the two great catholic interests of religion and science as peculiarly belonging to philosophy, not to any single philosopher surely, nor yet to any one philosophical school, but simply to that entire philosophic mind or spirit which pervades all schools, and lives and grows through all generations. And already, the immense services of such a philosophic spirit, to religion as well as to science, have become too obvious to be gainsaid. But for that spirit the Church to-day might be denouncing the rotundity of the earth as a deadly heresy, stigmatizing our antipodes as heathen myths or outcasts from grace, and consigning to the flames of the hell beneath, all who doubted the motion of the heavens above. By means of that spirit have been steadily reared those bulwarks of evidence, wall within wall and battlement above battlement, which now surround the citadel of the essential faith. It is that spirit, too, which has prescribed for science its methods and laws, has kept it within its just bounds, and is still at work upon its unsolved problems, with a patient faith that refuses to commit itself to any partisan extremes of the hour. And as the great debate goes on, it is that spirit which ever hopes for

yet higher sacred triumphs in the future than any that have been won in the past.

Let the nature of this great umpirage, with the case to be submitted, be now briefly summarized. Under the head of competency for the umpireship must be included the scientific virtues of curiosity, accuracy, and candor, the religious graces of reverence, humility, and faith, and over and above these the more philosophical qualities of abstraction and generalization, insight into reality, catholicity of view, and unquenchable craving for unity of truth, and for symmetry of knowledge. Among the terms of the umpirage must be premised and vindicated the validity of reason, the evidence of revelation, their correlation in each science and in the scale of the sciences, and the logical rules applicable to their normal, existing and prospective relations. As issues for the umpirage are presented the opposite hypotheses and dogmas held concerning the origin, development, and destiny of the heavens, of the earth and of man, of the individual and of society, of art, science, politics, and religion, together with the great metaphysical controversies and philosophical disputes which have divided the sects and the schools in all ages and countries.

A glimpse is enough to show us the vastness of the theme. Not by any one mind, not by any one people, not by any one age can it be mastered. It is the mighty argument of successive generations, proceeding with stately steps from its premises in a remote past toward its conclusions in a distant future. If we will surrender ourselves to it, we can see whither it is carrying us, and exult in the prospect.

In the view of religion, everything may appear miraculous; in the view of science everything may appear natural; while in the view of philosophy both will only appear more and more consistent aspects of one and the same reality. Let science, if it can, resolve the whole course of nature into one continuous process of correlate forces; let religion, if it must, exhibit that course of nature as one dazzling series of miracles; a true philosophy will yet behold them blending together as but the sure logic and even pulse of one Almighty Mind, ever reasoning through the whole creation, and flushing with life all creatures.

As yet, indeed, to us who can see but a speck, a span, of the two vast coinciding spheres, they must seem confused, dark and often contradictory. But "there may be beings in the universe, whose capacities and knowledge and views may be so extensive as that the whole Christian dispensation may to them appear natural; as natural as the visible known course of things appears to us." Be that as it may, if we will read the future as we can the past, it will not seem incredible that the most extreme investigators are now but groping through the darkness toward some central point where, at length, they shall meet as in a focus of light. Only, we may be sure, they will meet there, not like those two rash knights at their first encounter, not like those eager champions who are now filling the air with challenges and criminations, but rather like exhausted and bleeding warriors, after having fought their way into a recognition of each others' truth and virtue, to clasp hands as friends who had but mistaken themselves for foes.

CHAPTER II.

THE POSITIVE PHILOSOPHY OR THEORY OF NESCIENCE.

The position taken in the last chapter is, that the numerous unsolved problems now in debate between scientists and religionists are neither purely scientific, nor merely religious, but properly philosophical questions, to be discussed in a philosophical spirit, to be kept within the province of philosophical minds, and to be wrought as fast as they are settled into the ultimate philosophical system. We cannot decide them as mere theologians, appealing to Scripture alone; we cannot decide them as mere scientists, appealing to Nature alone; we can only decide them as philosophers, lovers of all knowledge and truth, embracing both Nature and Scripture in our view, sifting the evidence brought by their respective disciples, and then basing our conclusions upon that evidence, even though it should be against our previous opinions and wishes. This was also expressed in a more figurative manner by personifying the opposing interests of Science and Religion and representing Philosophy as the umpire between them; not any individual philosopher between any individual scientist and religionist; nor yet any particular system of philosophy to which both might appeal as a standard; but simply that philosophic mind, genius, or spirit which in the whole race of true philosophers has ever sought, and still seeks, with more or less thoroughness and success, to mediate between conflicting sects and schools, to distinguish their truths from their errors, and to derive from them the final system of perfect knowledge.

Now, it will be found that there are two extreme philosophical tendencies at the present day, susceptible of conciliation and combination, and thus giving rise to three distinct systems of science in relation to religion: 1st. The Positive Philosophy or theory of nescience as ignoring revelation. 2d. The Absolute Philosophy or theory of omniscience as superseding revelation. 3d. The Ultimate Philosophy or theory of perfectible science as concurring with revelation. We are to discuss the two former with the view of maintaining the latter.

The Positive Philosophy, according to its chief founder, Auguste Comte, restricts science to the laws of phenomena without inquiring into their causes, first or final, and therefore excludes theology and the metaphysical sciences, retains only the empirical sciences of mathematics, astronomy, physics, chemistry, physiology, social physics, and proposes a historical law of their evolution in a serial order, each through three stages, the first theological, the second metaphysical, and the third positive. Mr. J. Stuart Mill, in his System of Logic, adopts substantially the system of Comte, whilst enlarging his classification of the sciences so as to embrace psychology and ethics in distinction from the purely physical sciences. Mr. Herbert Spencer, in his New Philosophy, supports the same theory of nescience with the logic of Hamilton and Mansel, but classifies the sciences differently, and denies that they have observed a serial order in their evolution, or that the true historical law of their genesis has yet been found. Mr. George H. Lewes, as a disciple of Comte, characterizes the Unknowable Absolute of Spencer as a monotheistic development of fetichism, and maintains that the true Absolute Existence is the sum total of things, known only in part and by Feeling; but at the same time claims that some of the metaphysical sciences admit of the positive method, and proposes the term metempirical, in place of metaphysical, to distinguish the unknowable from the knowable region of research. Dr. John Fiske, in his "Cosmic Philosophy," as an independent critic of Comte and Spencer, has not only improved their systems, but maintained with remarkable vigor and acuteness, that in place of the three stages in the evolution of science,

there is but one continuous process of "deanthropomorphization" (or emancipation from human conceptions), and that the infinite and absolute cause of the universe, though unknowable, is yet manifested through the phenomenal world; though impersonal, is yet divine; and thus affords a basis for the harmony of science and religion, which may unite in recognizing it under the names of Nature and Deity. While such positivist philosophers thus differ in regard to some details, it will be seen that they alike ignore revealed theology, and in fact exclude all the metaphysical sciences from the realm of philosophy.

Let it, therefore, be premised that we are not about to assail this system on mere theological grounds. Such an argument might indeed be constructed, and one that would prove both valid and conclusive. The Positive Philosophy is notoriously open to the charges of atheism and infidelity. It not only makes no provision for a supernatural religion, but avowedly regards Christianity as only a remnant of the mythological era of history. To the Church it merely accords the merit of having served as a provisional institute in the process of its own development toward some future vague worship of Humanity or Nature. It would certainly be easy to accumulate objections of a religious character against a system so opposed to all the holier instincts of our nature, and so reckless of the entire evidence of divine revelation. There have not been wanting dissents of the kind even from those who could be suspected of no special interest in the theological profession. But the reasoning, sound as it is, can have no effect upon the disciples of Positivism, or upon any inclined to adopt its fundamental principle. According to that principle, theology itself, considered as a science of revealed truth, has been inductively demonstrated to be an effete superstition, no more worthy of scientific regard than mythology, of which indeed it is to be taken as only the last and highest development. Any argument, therefore, based upon theological premises, would be due, in the estimation of the Positive philosopher, to mere partisan adherence to a waning interest, and coolly accepted by him as an unconscious tribute to his own intellectual superiority.

For a similar reason, we do not now venture upon metaphysical premises, as defined by this system. Metaphysics, we are assured, must share the fate of theology. It is the peculiar boast of the Positive Philosophy that it subsists by a refutation of all other philosophies on strictly scientific grounds. It professes to have assailed and overthrown them with the hard facts of universal history and human nature, and to be already leaving them far behind it, in the wake of progress, as mere brilliant dreams of the childhood of science. The great body of metaphysicians are thus to find themselves in the same category with the theologians. It will be to no purpose that the spiritualist or the mystic should object to the materialistic and sceptical tendencies of the system, and demonstrate its utter incompetency to solve any of the great ontological problems of nature and humanity. The Positivist, in becoming a Positivist, has reasoned down all such inquiries as vain and puerile, and scorning to tread in any other path than that of solid facts, pretends to have mounted by the sure steps of induction to an eminence from whence he can proudly contemplate all the objections of reason and of faith, of religion and of philosophy, as mere vagaries of decaying superstition and prejudice.

In the present argument, therefore, we accept the only alternative which the disciples of this school seem disposed to leave us. We descend from the aerial regions of theology and metaphysics, upon the narrow arena of the Positive Philosophy itself, and take the weapons it would force into our own hands. It need not be imagined that we are only about to exemplify those "theological and metaphysical prejudices," which its admirers complacently dream it is destined to supplant, nor even that the merit of originality must belong to any one who attempts its refutation. Our apprehension is rather, that if Positivism could be made its own judge, it would pronounce its own sentence. In a word, we believe it possible to show that it proceeds upon the abuse of a sound method, and that the little truth it has gathered up into itself will alone suffice to refute its remaining error.

But what is the Positive Philosophy? In the main, it is that which is familiarly known among us as the inductive

philosophy. Comte himself frequently declares his system to be only the extension and completion of the Baconian method. His admirers are fond of styling him "the Bacon of the Nineteenth Century;" and in particular point with pride to his classification of the sciences as a second *Novum Organum*. We are not insensible either to the merits or to the defects of this portion of his labors. As a simple construction of the intellect, if not as a direct contribution to the philosphy of physical research, it has been pronounced by Morell "a masterpiece of scientific thinking." We cannot perceive, however, that what is true and valuable in it of necessity arises out of the accompanying speculations, or indeed that it constitutes the distinguishing feature of the system.

On the contrary, that distinguishing feature undoubtedly is, its attempted application of the inductive method to the phenomena of human intelligence, as displayed in history, with the view of discovering a law by means of which the natural process of science shall be ascertained and regulated. In other words, it aspires to be a philosophy of science based upon the history of science. It would apply the accumulated experience of the race to the great problem of determining what are the true limits, the method, and the goal of human knowledge. With this design it enters upon a survey of the course of man's speculative or intellectual convictions throughout all time, the result of which is the announcement of a grand law of scientific development, which all the most advanced sciences are declared to have observed in their progress toward exact, real knowledge, and which all the remainder must therefore, sooner or later, illustrate.

Now, before proceeding any further, we might here raise an objection of no little consequence. This proposed "law of the intellectual evolution of humanity," Comte would constitute the summary law of universal history, by means of which all its complex phenomena are to be explained. The entire social development, whether material, political, or religious, he would make to depend upon the development of science. He would thus not only render science the paramount interest, but actually involve every other interest, art, politics, and even religion, in the process of its evolution; so

that, as Mr. Mill expresses it, "Speculation, intellectual activity, the pursuit of truth, is the main determining cause of the social progress." But to this it might be objected, not simply that the speculative propensity is too inoperative, and restricted to too small a portion of mankind, to admit of such a predominance being assigned to it, but that, with all the potency which can be justly claimed for it, it is itself subordinate to other social agencies utterly beyond its control. In a word, we believe it could be shown, and that by strictly positive reasoning, that while the material progress of society does indeed depend upon its intellectual progress, yet its intellectual depends upon its religious progress, and its religious progress upon Providence. The effect of such an argument would be to conserve whatever of truth may be found embodied in Comte's "law of the intellectual evolution," and yet preclude the destructive errors which have resulted from his exaggerated estimate and perverse application of that law. To mention only a simple example, religion, and in particular, revealed religion, would then be made to appear as itself "the main determining cause," and not a mere accompanying effect of civilization. Without venturing, however, upon such inquiries, we now return to the consideration of the law itself.

The human mind, according to this law, invariably adopts three successive modes of explaining phenomena; first, by referring them to supernatural agents; then, to metaphysical entities; and at last to mere natural laws. These three stages of intellectual development, in the order named, logically and practically ensue upon each other, both in the race and in the individual, and are to be termed respectively, the theological, the metaphysical, and the positive stage. Let each be briefly characterized.

In the theological stage, it is the spontaneous tendency of mankind to attribute all phenomena to the arbitrary wills of supernatural beings. Such is the necessary point of departure for the human intellect; and three phases mark its development. At first, external objects in nature are conceived of by the wondering savage as animated with a life analogous to his own, and having a mysterious power over him for good or evil. This is fetichism, which is the grossest form of the theo-

logical instinct, and is illustrated by such of the human tribes as are still but slightly removed from animality. By degrees, however, through the generalizing and social faculties, these individual and domestic fetiches become grouped together under some more powerful fetich of the particular tribe, or department of nature to which they belong, and the mythical creature is endowed with attributes in keeping with the elements over which he is imagined to preside, or the interests he is supposed to subserve. This is the era of polytheism, when the woods are peopled with dryads, and the waters with naiads, and the heavens with the passions and graces, and all nature is alive with gods and goddesses. But at last the propensity to transfer human personality into outward objects, having mounted from one degree of generality to another with the increasing spirit of nationality and speculation, reaches its climax in monotheism, the doctrine of one supreme fetich or myth, by which all others are to be subordinated and rendered obsolete. The gods now disappear before the idea of Jehovah; the strife of contending powers in nature is harmonized in the notion of one absolute Will; and prayer aspires after the prize of universal control. This is the perfection of the theological spirit, and it is admitted to be an immense advance upon the gross materialistic pantheism in which it originated. Yet with all its unity and consistency, it must be regarded as a mere system of speculative opinions, by which society is for a time held together in the process of unfolding its own intellective capacity, and no more destined to permanence than either of the preceding phases of the same tendency. The god, in whose single will all phenomena have thus been colligated, is a mere product of human speculation, spontaneously exercising and developing itself through long ages, and by a combination of innumerable minds, from its first feeble glimmerings in the half-animal savage, up to its most brilliant surmises in the cultured sage or saint. And now the very agencies concerned in the elaboration of this august Abstraction, which men have learned to adore and love, must turn against it and effect its dissolution. For, of necessity it soon begins to be discovered, at first by the speculative class, and then through them by the masses, that there

are vast bodies of phenomena not under the regulation of a divine will, but simply of natural laws; and as this empire of natural laws is extended from one class of facts to another, that of a divine will, both in science and in practice, proportionably diminishes. Thus a new system of opinions is destined to gradually take the place of the old as the basis of a new social organization. But, in the mean time, there must exist some scheme of provisional conceptions by means of which the transition shall be effected; and it is this which constitutes the intermediate or second great stage of the intellectual evolution.

In the metaphysical stage, the primitive tendency to explain phenomena by supernatural agencies, is being steadily supplanted by means of a tendency to explain them by metaphysical abstractions. Such a revolution is necessitated by the advance of speculation; and involves the two-fold process of decomposing the old theological system, and preparing the elements of the new Positive system. Considered in its relation to the preceding and succeeding stage, it is, therefore, either a destructive or constructive agency. As a destructive agency, the metaphysical spirit exhibits three phases. At first, that freedom of individual inquiry, provoked and fostered by monotheism as distinguished from polytheism, gives rise to heresy and dissension, and the myth of a Supreme Being is consequently espoused by rival claimants. This is Protestantism, by which theology is driven to war with itself. Then, the critical spirit advances from heresy to infidelity, and for a divine person is now substituted a personification called Nature; for a divine will, the notion of a Providence submitting itself to rules; and for divine purposes in particular objects or events, the entities of causes, first and final. This is deism, by which theology is banished to the pulpit and the cloister. At last, a logical and systematic scepticism sweeps away all vestiges of supernaturalism, extirpates even the remaining abstraction of a great First Cause, reduces the notion of force or substance in phenomena to a mere scientific fiction, and leaves them wholly to the regulation of their own laws of co-existence and succession. This is atheism, by which theology is consigned to history as an extinct in-

terest. As a constructive agency, the metaphysical spirit, while in the act of disorganizing the old theological regime, is providing for the new Positive regime, by liberating those various industrial and speculative movements essential to such a reorganization. Thus is at length opened the way for the third and final stage of the great development.

In the Positive stage, the tendency to refer phenomena to supernatural wills, having been supplanted by a tendency to refer them to metaphysical causes, is now succeeded by a tendency to refer them to natural laws. Such is the inevitable terminus of the whole evolution, and herein must be sought its legitimate consummation. As it is necessary for humanity to begin with a supernatural explanation of the facts with which it has to deal, and proceed by a metaphysical explanation, so must it at last end with a purely natural explanation, wherein it shall be concerned solely with the facts themselves, as spontaneously displayed under their laws, and forever abandon all inquiry into their origin or causes as vain and puerile. But since the different kinds of facts vary in simplicity and generality, the different kinds of knowledge corresponding to them must proceed at unequal rates through the three stages, arriving at the final stage in the order of their relative freedom from complexity and specialness. Accordingly mathematics, having to deal with facts the most abstract and universal, and least exposed to theological or metaphysical perversion, was the first of the sciences to assume a character of Positivity. Astronomy, in consequence of its mathematical simplicity and generality, was the next to reach the Positive stage, having groped through the two preceding stages of astrolatry and astrology. Terrestrial physics, the simplest of the sciences after astronomy, is already emerging into a Positive form, though still hampered with some remnants of the earlier periods. Biology, however, being concerned with the more complex phenomena of organization, is as yet involved in metaphysical confusion, particularly in its psychological department; while sociology is totally enveloped in the primitive theological darkness; the most advanced thinkers still dreaming that the action of associated human beings is regulated by Providence or legis-

lation rather than by natural laws. But the sciences scale the summit of truth in linked series, each being helped forward by its predecessor, and bringing with it the pledge of its successor. The day must therefore come when even sociology, the last of the train, shall be planted on the same Positive eminence with mathematics and astronomy, and so enable us to resolve political questions with the same certainty as problems in mechanics, or predict the career of societies, in given circumstances, with the same precision that we now describe the orbits of the heavenly bodies. This will be the millennium of the Positive philosopher, wherein science shall take the reins of politics, shall teach art to subjugate nature, and idealize the triumph in creations of more than classic glory, and shall even regenerate religion itself, by rendering it the intelligent worship of that Humanity, whose wondrous knowledge, power, and goodness, were once embodied in the myth of a Supreme Being.

Such is an outline of Comte's law of the intellectual development of humanity, together with the tremendous conclusions pendant upon it. No one at all acquainted with it will deny that we have done it all the justice possible in so brief a statement. But, before we admit its scientific pretensions, what we have now a right to demand upon the grounds of Positivism itself is, that it be sustained by the "combined evidence of human history and human nature." These are all the conditions of such a law, as prescribed by Mr. Mill, (one of the warmest English admirers of the system); they are, moreover, the conditions to which Comte himself submits:—"From the study of the development of human intelligence, in all directions, and through all times, the discovery arises of a great fundamental law, to which it is necessarily subject, and which has a solid foundation of proof, both in the facts of our organization, and in our historical experience." And we see no particular reason to question the justness of these criteria. Certainly, if man does observe any such uniformity in his intellectual development as is supposed, it will not only be displayed by his actual history, but also appear to be involved in his very nature. Were either species of evidence wanting, the phenomena of his

being could not be made the subject of Positive science. We might show, from the history of humanity, that it has always pursued a certain career; but will this be its career in the future? Or we might show, from the nature of humanity, that it is necessitated to pursue a certain career; but has this been its career in the past? Should there be, however, a convergence of these inductions to the same purport; could we demonstrate that human history has always been what might be expected from our survey of human nature, and that human nature actually is what might be expected from our survey of human history, we might then be in a fair way of attaining a true scientific law, by means of which to account for the past, and foresee the future career of society. Whether such a law actually obtains and is ascertainable, we do not now inquire, but simply proceed to show that Comte has fulfilled neither its empirical nor theoretical conditions.

Of the former class of proofs, the first and most accessible would be afforded by individual experience. We should expect to find the alleged law of intellection actually illustrated in the development of the most scientific minds. Comte distinctly asserts this to be the case: "The point of departure of the individual and of the race being the same, the phases of the mind of a man will correspond to the epochs of the race. Now each of us is aware, if he looks back upon his own history, that he was a theologian in his childhood, a metaphysician in his youth, and a natural philosopher in his manhood. All men who are up to their age can verify this for themselves," p. 3, vol. i. The only proper answer to such an argument is obvious. The author of the Positive Philosophy may certainly be allowed to speak for himself, but not necessarily for the rest of mankind, nor even for the whole of that party who are unwilling to acknowledge themselves entirely behind the age. It is believed, there are still extant many eminent persons, in whom the theological and metaphysical spirit has not only survived the period of adolescence, but even the most mature attacks of Positivism itself.

The next source of empirical proof would be that afforded by the experience of the race. To establish this law, it would be necessary to show that the three periods have been

successively displayed in the actual history of humanity. The propriety of this test is recognized by Comte when he characterizes the ancient world as theological, the mediæval as metaphysical, and the modern as Positive. But it surely requires no great amount of historical erudition to expose the fallacy of such a generalization. If we have reference to quality or quantity, the theology and metaphysics of the present age will certainly compare with those of any primitive era. Who will pretend that the religious and philosophic instincts of humanity are on the decline, in presence of such gigantic systems as now prevail in modern Europe? On the contrary, it is indisputable that there never was a time when the speculative energies of the race were more absorbed in theological and metaphysical inquiries, or when theology and metaphysics were exalted to so high a rank in the scale of the sciences, or when they were so generally admitted to be among the legitimate pursuits of the human intellect. He must simply shut his eyes to the great mass of facts around him, who goes into history expecting to find it exhibiting this law of the three tendencies succeeding and exhausting each other. It is patent to the whole world that they all survive among us, and that their most violent collisions have not as yet resulted in the extinction of any one of the series.

How comes it then, that the modern Bacon should have run so blindly in the face of universal experience? Simply by culling the facts to suit his theory. There is no hypothesis which might not thus be established. The literature of historical science is replete with examples of such hasty and unfounded generalization. This of Comte is simply the last and most imposing of the train. His historical review, in support of his law of the triple evolution, even if it could be pronounced accurate so far as it goes, actually proves nothing as to the chief points in controversy, but is open to a valid and unanswerable objection from each class of his opponents.

On the one hand, the theologian may fairly object to it, that it is restricted to that very series of nations whose career is alleged to have been determined by a divine revelation and a supernatural Providence. It is observable that Comte does not pretend to look for any full illustration of his great law of

history beyond the boundaries of Christendom. The reason given for this limitation is, that oriental countries must be regarded as the seat of a kind of sporadic civilization, which, having been early detached from the more compact and continuous civilization of the West, was arrested in its development, and has ever since been left to run in the vicious circles of the primitive theological tendency. If we inquire how it happened that such a suspension of the law should have occurred only in heathen nations, while Christian nations have gone forward from the theological, through the metaphysical, toward the Positive state, we are answered with some imposing generalities about the effect of European climate and Caucasian organization on social development, together with a confession that the whole "question of the scene and agent of the chief progression of our race" is insolvable because premature or radically inaccessible. But this, even if it could satisfy a strict Positivist, will not satisfy a theologian. What would be his explanation we are relieved by the terms of the present argument from inquiring. Yet, the simple fact that he professes to have his own explanation, obviously imposes upon his Positive antagonist the alternative of driving him from the field with some counter explanation, or himself retiring into less debatable territory for the historical evidence of his theory. If humanity, independent of divine revelation, obeys his pretended law of human development, let him leave "the little Jewish theocracy, derived in an accidental way from Egypt," and go out into the broad field of universal history and there gather up the facts to verify it. Let him take some other form of fetichism or polytheism than that which came in contact with Christianity; for example, Asiatic or American mythology, and exhibit it to us as spontaneously developing into monotheism, and thence declining, through the metaphysical transit, into Positivism. Until this has been accomplished, the supernatural explanation must be allowed to hold precedence of the natural, and the whole argument from history, so far as theology is concerned, remain simply irrelevant.

Then, on the other hand, the metaphysician may pronounce it equally irrelevant as regards his position. It is to be re-

marked that Comte, not content with excluding all but Christian civilization from his estimate, also refuses to include in it any but physical subjects, or at least such as are in no sense metaphysical or supra-physical. His reason for this restriction of course is, that, according to his philosophy, the physical or inductive sciences alone are feasible. He maintains that no phenomena exist but such as can be subjected to the inductive method, and that no other method is legitimate. All supernatural or super-sensuous phenomena, such as would be displayed by a divine or human spirit, are fictitious; and all inquiry into the causes or essences of any phenomena, whether by revelation or intuition, is fatuitous, and to be stigmatized as mere infantine curiosity. Consequently, the only sciences which can be allowed to enter into his review are those of mathematics, astronomy, physics, physiology (including phrenology as the science of mind), and sociology (considered as the extension of physiology). As for the various psychical and revealed sciences, which have so long pretended to exist, they are to be accounted for by being ignored. In short, we are to look for nothing in all the history of human intelligence but the Positive sciences. This is certainly very convenient for the Positivist; but might not the metaphysician, if allowed thus to choose his facts, rebut the argument? It will be observed, that we are not now inquiring into the legitimacy or feasibility of any of the exscinded sciences, but are simply maintaining that, in view of their notorious existence in the most civilized nations, for anything that Comte's own argument could prove to the contrary, they may continue to exist, each in its own domain of facts, and with its own method of dealing with those facts. And now, when we unite the two abatements, which must thus be made, of the historical evidence adduced in proof of this law, into what a meagre compass do we find its voluminous pretensions have shrunken? It is neither proved to be the law of the development of the whole human race, nor the law of the development of the whole human intelligence, since there are confessedly vast portions of mankind and various bodies of knowledge which have never to any extent exhibited its operation. The very utmost that could be conceded to it,

would be that it is the law of the development of the Positive sciences, or, to speak more accurately, of the natural sciences, since they alone can pretend to have become Positive, Comte himself admitting that what are commonly regarded as the mental and moral sciences "have nowhere risen to Positivity except in his book."

But even that meagre concession cannot be made. Even that last slender foothold must be contested. The theory is actually unable to maintain itself on the ground of its own chosen facts. We deny that the natural sciences themselves have ever properly observed this law. Their history does not show that they have emerged into the final stage only by extinguishing the two preceding stages. It is not a matter of fact that the Positive spirit, in those fields of research where it has most predominated, has actually extirpated the theological or metaphysical spirit. We may take for our example the most Positive of all the natural sciences. As it respects the phenomena of astronomy, will it be maintained, that the tendency to refer them to mechanical laws has ever generally and permanently supplanted the tendency to refer them also to a Divine will, or to second causes? Individual exceptions indeed there always are; but have astronomers, as a class, been atheists and materialists, or have their most mathematical predictions had the actual effect, either in the scientific or the popular mind, of dissipating all religious belief in a Divine Maker of suns and systems, or suppressing all speculative inquiry into the mode of their production and development? Did Newton in the act of discovering the law of gravitation cease to be a theologian? Did Kant in the act of propounding his cosmic hypothesis cease to be a metaphysician? Or have theologians and metaphysicians themselves actually surrendered astronomy to Positive science? Has not astronomy become the very poetry of religion and philosophy? We are not concerned as yet to account for the fact, but the fact itself who will deny, that even amid the rigid geometry and mechanics of the heavenly bodies, where inflexible laws reign supreme, theology as of old still comes to adore, and metaphysics to speculate?

And the argument only cumulates as we descend to the

less Positive sciences of physics and physiology. However much such a result may have been apprehended, yet who will pretend it is actually the case that atheism and materialism have taken exclusive possession of the votaries of physical science? Have they not as a body set up the notion of Nature as a kind of "Unknown God," whom they are willing that theology should declare unto them? And do they not proceed in their researches by methods and upon hypotheses, which they confess that metaphysics alone can furnish them? What are their various theories of heat, light, electricity, organization and life, but the existing metaphysics of physical science? and what is their enthusiastic admiration of nature, but a kind of blind adoration of nature's God? We do not now explain this, but is it not the case, that there are often found among them as much practical religion and sound philosophy as among professional theologians or trained metaphysicians?

To all this may be added the conclusive fact, that in those nations and ages by which the Positive tendency has been most cultivated, the other two tendencies are still found flourishing unimpaired and unmolested. Where the natural sciences have reached the greatest perfection, there may also be seen, not simply in juxtaposition, but in logical combination with them, the theological and metaphysical sciences. Is theology on the decline in inductive England and America? Are metaphysics in their decadence in positive France? Do the Germans show themselves to be the least theological because the most metaphysical of modern nations? Or will it be asserted that because the present age is distinguishable for a predominance of the scientific spirit, it is also distinguishable for a decline of the religious and philosophic spirit? If it is remarkable for its marvels of physical research and material civilization, is it not equally remarkable for its expanded schemes of Christian philanthropy, and the formidable grandeur of its metaphysical speculations? And were we to ascend into that community of thinkers, who are held to express the foremost mind of the race, might we not find that so far from its being the paramount tendency of the human intellect to install Positive science as the sum of

truth, it is rather in danger of careering off with the Phaëthon of transcendental metaphysics, toward the abysses of a kind of crude and all-involving theology? Must not even Comte admit rivals in Hegel and Cousin?

We need not, however, pursue these inquiries. It is already sufficiently apparent what is the value of the historical argument for the system. It miserably fails in the very societies where it should be most conspicuously established; it arbitrarily ignores the very sciences it proposes to supplant; and, thus retiring into a mere corner of the vast domain of truth, there falls impaled upon the very facts it had gathered for its support. If "the evidence of human history" shows anything in regard to the question, it shows that the three tendencies, instead of opposing and destroying one another, have actually proceeded together in their development, over every field of research they entered, and are now to be found harmoniously coexisting in the most advanced nations, and the most accomplished minds.

But as yet we have considered only one branch of the reasoning by which, according to the terms of Positivism, this law must be verified. Even if we had found that member of the argument irrefutable, it would of itself prove insufficient until corroborated by the other member. The law must be upheld by their mutual support, or fall as the keystone with the arch into ruin. Though it had been shown that humanity has hitherto, in some societies, and in some sciences, exhibited the great triple evolution, this would not prove that humanity will hereafter, in all other sciences, and in all other societies, pursue the same course, unless it could also be shown that such a course is necessitated by its very constitution, and involved in its very procedure. Theology and Metaphysics might have become universally extinct, and Positivism universally predominant, yet it would still be a question whether those extinct tendencies would not revive, and either suspend, reverse, or radically change the whole social evolution. Before the argument can be considered complete, it must be made to appear resultant from the actual principles of human nature, or from the actual process of human intelligence, that the three stages should successively arise, surmount and

destroy each its predecessor. When "the facts of our organization" thus concur with "the facts of our historical experience," to show that it is the inevitable course of the race to proceed from a supernatural, by a metaphysical, toward a natural explanation of all phenomena, we may then regard the law as fully verified. But this concurrence is precisely what cannot be established. If we found the historical argument unsupported, we shall now find the theoretical or *à priori* argument a still more signal failure.

The position which must be maintained in such an argument is, that the three tendencies are antagonistic and irreconcilable. If the human intellect is necessitated to proceed from one to the other, it must be because they are mutually repulsive, and cannot in any form and to any extent be made to combine and coexist.

This position is taken by Comte when he defines them as "three methods of philosophizing, the character of which is essentially different, and even radically opposed;" and throughout his analysis he represents them as involved in a three-fold antagonism, intellectual, moral, and social, destined to issue in the utter extinction of theology, and the entire supremacy of Positivism, through the intervention of metaphysics.

Let us first consider the intellectual antagonism of theology and Positive science. This is alleged to arise out of the necessity for observing and explaining facts by means of theories, in order to attain real knowledge. During the infancy of reason and of society, mankind spontaneously resort to the hypothesis of a god, as a mode of accounting for all phenomena. But this hypothesis, so inevitable and useful for a time, ceases to be either necessary or tenable, when it is found that some phenomena can only be explained by means of natural laws which exclude the action of a divine will; and since other phenomena, still attributed to the divine will, may be presumed to observe similar laws yet to be ascertained, we are to conclude that the whole theory of a Deity and a supernatural world must ultimately be abandoned and rendered obsolete, like any other crude hypothesis which science has outgrown and exploded.

But, if we should admit that the Baconian method is thus to be taken as the spontaneous procedure of the whole human intelligence, and the only source of real knowledge, what evidence have we that the theological theory of the universe, so to call it, either is or can be assailed by any amount of Positive science? Wherein consists the incompatibility of referring the very same phenomena both to natural laws and to the divine will? or of referring to the divine will, not the phenomena only, but the laws themselves? What are all natural laws but mere uniformities which mark the action of the divine will? Because the Deity, in His voluntary determination of the coexistences and successions of certain phenomena, does not act capriciously but with an inflexible regularity, are we to conclude that such regularity inheres in the phenomena themselves by sheer chance or spontaneity, and that His continuous volition is not required for its maintenance? Or because we have ascertained that certain phenomena, once attributed to His direct agency, observe a fixed order in their occurrence, are we to infer that He has less to do with these than with others not thus orderly in their occurrence? Has He abdicated His empire wherever He has set up laws for its regulation? and must we take the existence of such laws to be demonstrative of His non-existence? The very contrary of this is demanded by our intellectual constitution. Natural laws cannot but be regarded as the most conspicuous evidences possible of the reality and presence of a divine will; and every advance of Positive science, so far from being an invasion of theology, is only a fresh demonstration of its validity; an additional proof that the intelligence displayed on the face of nature does not belong to nature itself, but shines through and from beyond it, out of that one Eternal Mind by which it is upheld and directed.

> "Calm, He veils His will in everlasting laws,
> Which, and not Him, the skeptic seeing, exclaims,
> 'Wherefore a God? The world itself is God:'
> And never did a Christian's adoration
> So praise Him as this skeptic's blasphemy."

The most Positive of the sciences may be cited in illustration. Are astronomy and theology, as embraced in one view, logi-

cally inconsistent or repellant? That some exceptional minds might take the discovery of such a law as gravitation to be proof that the hypothesis of a God is no longer necessary, may be admitted; but that this is the natural, or rational inference, can be shown by nothing that appears in a sound mental organization. On the contrary, since every law pre-supposes an intelligent law-giver, we are obliged to conceive gravitation itself as nothing less than the strenuous exertion of the Almighty will among the planetary masses, and the ultimate and simplest expression of eternal purpose in respect to their movements. Astronomy, so far from assailing theological convictions, actually upholds them with all the force of mathematical demonstration, by inviting us to reverently conceive of God Himself as that sublime Mechanician, who, on the theatre of immensity, and in view of all intelligent creatures, is solving the most stupendous problems of motion and matter that could be imagined; and every new planet or star gathered within its expanding horizon, is but a fresh accession to the evidence whereby "the heavens declare the glory of God."

Nor would the argument be weakened should we imagine other more complex phenomena, such as even the phenomena of society, becoming, as predicted by Comte, the subject of Positive science. The laws of social development, supposing such laws to exist, might be so well ascertained and defined as to enable us to project the course of civilization, in given circumstances, with scientific accuracy; yet this would not invalidate the hypothesis of a divine will as the source and animus of those social laws. It would rather demonstrate its existence where as yet it is scarcely more than presumed. It would simply show that the course of human history is not at the mercy of caprice or necessity, but that in Providence as well as in nature, throughout the spiritual no less than the material universe, the Infinite Will is everywhere guided by the Infinite Reason.

In short, it may be taken as an axiom, that Positive science, to whatever limit extended, could never impair the validity of theology, but must ever only strengthen its foundations and enlarge its domain. Though the process of referring facts to

laws had been carried to the extreme of some one summary law, by means of which the entire aggregate of phenomena could be explained, a divine will would not even then have become hypothetically unnecessary, but remain as that scientific postulate or ultimate fact upon which the whole fabric of human knowledge reposes, and without which it could have neither rational basis nor consistency. Still would it be the instinctive tendency of the human intellect to look up to God as that Infinite Lawgiver, whose potent volition pervades and conducts the mighty mechanism of the universe, and but for whose immutable purpose it would fall into chaos, or vanish like a dream.

In like manner, it may be shown that there is no moral antagonism of the two tendencies. It is asserted, that the sentiments inspired by theology, partaking of its own illusory and transient nature, are repugnant to other more rational and permanent sentiments evoked by Positive science. While the hypothesis of a God prevails, man draws courage and consolation from imagined access to a divine will, and believes himself capable of modifying the universe by means of his prayers. But this hope, so inspiring and salutary in an infantile stage of his development, he readily relinquishes for the more animating and reasonable prospect of modifying the universe by means of his own personal resources. "We find ourselves able," says Comte, "to dispense with supernatural aid in our difficulties and sufferings, in proportion as we obtain a gradual control over nature by a knowledge of her laws." He even intimates that the devotional spirit already languishes in scientific minds; and it is not too much for him to anticipate a period when the throne of grace shall have become as mythical as the oracle or the augury.

The shortest answer to all this is, that such a state of the moral constitution of man is simply impracticable, if not inconceivable. We may give imagination the wildest license; we may suppose all science and art carried to their utmost perfection; yet what would be the result? Our astronomy could not remedy the planetary disturbance it might predict; our meteorology could not improve the weather it might prognosticate; our physiology could not

avert the death it might explain; and even our sociology could not regenerate the civilization it might project. The acquisition of omniscience itself could not invest mankind with absolute "control over nature," or destroy their instinctive dependence upon God, but, if left without adequate religious support, would either whelm them in helpless bewilderment, or leave them, as conscious children of fate, to yield to death and danger like dumb cattle or crushed machines.

We may go even a step further, and maintain, that the theological spirit, instead of being supplanted, is actually invigorated by the Positive spirit. Not only does it assert itself in presence of nature's most inflexible laws, as when the Atheist cries to God in shipwreck, or the Christian prays for his daily bread; but it may draw new courage from its knowledge of those laws, and from the spectacle of that human prowess acquired through such knowledge. When we behold what interventions in the fixed course of nature our weak, blind Will can accomplish, shall we doubt that, in the event of an adequate spiritual emergency, any intervention would be too great for that Will which, not only itself lives in all natural laws, but is ever swayed by omnipotent and omniscient love? Shall we deem the possible with man impossible with God? Shall we not rather deem the possible with God impossible with man, and all the more readily believe, that the "modifications of the universe," just declared impracticable to human science and art, were once actually effected by divine knowledge and power, when the sun and moon stood still in the vale of Ajalon; when it rained out of the brazen sky of Carmel; when death was dragged in triumph after the fiery chariot of Elijah; and when Messiah came to regenerate by His Church the whole social development of mankind? The limited power of man over the universe only helps us to conceive of the unlimited power of God, and may but impel us to resort to Him in all the more confidence and hope. And though our spiritual exigencies do not require the miracles incident to less favored eras, yet may we still aspire after whatsoever things are in accordance with His will, and into that lofty region where His Spirit communes

with ours, ascend out of the rigid mechanism of nature, for such assurances and convictions as shall enable us to return and triumphantly withstand her most appalling terrors, or placidly yield to her most inevitable disasters.

Not even the supposed laws of history could oppose any barrier against such access of the finite spirit to the Infinite Spirit. We may imagine the course of Providence, in the direction of individual or social development, to observe uniformities as inflexible as those of mechanics; yet this need not shake our faith in the freedom either of human or divine volition. It would only convince us that the law of holiness is at least as fixed as the law of gravitation, and that spiritual death as inevitably ensues upon the infraction of the one, as physical death upon the infraction of the other. We should but be the better able to conceive of that God, with whom we have to do, as not less uniform in His determination of moral than of material phenomena, and find in His promises and provisions all the more rational basis for our prayers and hopes, whether for individual or social regeneration.

As positive science could never invalidate the ideas of theology, so it could never eradicate the instincts of piety. The spectacle of an entire universe under the regulation of laws, would not only be logically inconsistent, but morally appalling, without the notion of a Beneficent Lawgiver; and were it presented to the pious soul, instead of beholding in it a mere iron mechanism of fate, he would only regard it as an exquisite system of divine volitions, susceptible of being made to work together for his good, and of all its anomalies pronounce none so monstrous as would be that of a single legitimate prayer left unanswered, worse even than the sceptic's notion of a miracle, as appearing not simply a suspension of the laws of nature, but even of the will of God.

It would seem scarcely necessary now to argue that there can be no social antagonism of the two tendencies. This is admitted to be a mere consequence of their intellectual and moral antagonism. The war between them, in any society where it is waged, it is asserted, must issue in political revolution. So long as a theological theory prevails, and the consequent moral sentiments abound, the mass of individuals

spontaneously concur upon a basis of common opinions with some degree of stability, order, and peace. But no sooner do these fundamental opinions begin to be assailed by heresy, infidelity, and schism, than ancient institutions become unsettled, and society is at the alternative of continuing in anarchy, or assuming a new organization. According to Comte, the most civilized societies are now passing through this anarchical condition, consequent upon a decline of theological, and rise of Positive opinions, effected by the critical spirit of modern metaphysics; but it is his expectation that Positivism will ultimately so predominate over Monotheism as to place Christianity on a par with Mohammedanism, and at length consign the Church to antiquity, as a mere worn chrysalis, out of which civilization shall have struggled forth into new life and glory.

An argument which begins in absurdity, can only accumulate absurdity. This notion of substituting Positive for theological opinions in the social organism, is even more chimerical than that of substituting the scientific for the devotional spirit in the moral constitution. As yet, Positive opinions do not exist in the form of any such received body of doctrine, as could afford a nucleus for social concurrence; and were such opinions ever to predominate, they would prove, if not utterly fatuitous, yet thoroughly disorganizing. The picture, which Comte elaborates, of a new social organization resulting from such opinions, and composed of a race of virtual atheists, absorbed in the worship of their own humanity as a deity, cannot exist even in imagination without instantly dissolving into anarchy, or relapsing to barbarism.

Indeed, so far from admitting that theological opinions could ever be extirpated from the social constitution by Positive science, we might rather maintain that it is ultimately destined to strengthen and extend them. Truth, from whatever source it emanates, must yet be found inconsistent with all other truth; and were human knowledge thoroughly consummated and diffused, it would but demonstrate the God of nature and of history to be the God of revelation, with such universal and conspicuous illustration that all should know the Lord, from the least even unto the greatest.

The foregoing argument in respect to the relations of theology and Positive science has virtually secured that in respect to the relations of both to metaphysics. It is only on the supposition that the two extremes of the series are antagonistic, that the intermediate term could acquire any hostile bearing. That supposition having been disproved, we must regard the abstractions of metaphysics as comparatively harmless and inoperative. The mere theoretical substitution of the entity of "Nature" for the Deity, of "phenomena" for divine manifestations, of "cause" or "force" for the divine will, and of "laws" for the uniformities of divine action, instead of marking the deterioration of theology, is only to be taken as the convenient technicality of science; and heresy, infidelity, and schism, so far from decomposing the theological system of society, are but so many purgative processes, by which it is being cleansed and perfected. While, as respects the relation of metaphysics to Positive science, it would not be difficult to show that the progress of the latter actually depends upon the progress of the former; and that were both completed, they would acquire rational support and consistency only by means of theology; or, in other words, that the normal order of the three pursuits is the exact reverse of the order alleged, and that science, in escaping from the pupilage of theology, and passing under the discipline of metaphysics, does not then recoil with parricidal and suicidal blow upon the parent that nurtured her, and the master by whom she is trained; but is rather destined to return, though after long estrangement, and by a circuitous route, under the guidance of a sound metaphysic, back to the feet of that ancient theology from whose loins she sprang, and there unite in rendering the knowledge of man coincident with the knowledge of God and the truth as it is in nature, everywhere congruous with the truth as it is in revelation.

Upon such profound inquiries, however, we do not yet venture. We have now sufficiently examined both species of testimony adduced in support of this supposed law of intellectual development. It fulfills neither of the prescribed conditions of such a law. It is as wholly unsustained by the evidence of human nature, as we found it to be by the evidence

of human history. The facts of our mental, moral, and social constitution, concur with the facts of historical experience, in showing that the three pursuits, instead of waging exterminating warfare, are but so many allied interests of truth, equally spontaneous, legitimate, and permanent.

And now, were any illustration needed to confirm such an argument, where could we find a better than this very system itself? What is the "Positive Philosophy" but a product of the metaphysical tendency? What is the "Positive Religion" but a product of the theological tendency? And can we conceive of any abstractionism more wild than that which would construct the entire fabric of human knowledge out of an empty generalization of history? or of any fetichism more gross than that which, having studiously invested the notion of humanity with the attributes of Deity, would then invite mankind to love and serve it as their god? Thus, by a recoil of truth from beneath the foot of error, wherein something of the sublimity of retribution is joined to the rigor of demonstration, does this system not only fail on its own premises, but remain a conspicuous monument of the failure. Professing to deride theology and metaphysics, it stands forth as itself, in its own perverted sense of the words, the most metaphysical of all metaphysics, and the most theological of all theologies.

We ought not now to be charged with any undue theological or metaphysical prejudice in concluding this discussion with a single practical lesson to be learned by each of the two obnoxious professions from this system.

The metaphysician may find in it new evidence of the insufficiency of any one method of research as pursued to the exclusion of every other. If there is any one method, upon which it might seem safe to place such entire reliance, it is, perhaps, that inductive procedure which is the characteristic and the pride of the English mind. We have been wont to boast of the healthy appetite for facts, which it has fostered among us, and to congratulate ourselves on our consequent happy seclusion from the devastating career of foreign transcendentalism. All that was needed to undeceive us is a system like the one before us, avowedly proceeding on our favorite Baconian method toward the very worst results of German speculation.

The simple truth is, that while revelation, intuition, and induction, are equally legitimate, within their own appropriate spheres, yet, in the existing fragmentary and schismatic condition of human knowledge, neither can be pushed beyond the limits imposed upon it by the others, except at its own peril. Theology may not safely invade such a question as the antiquity of the globe, since that is a legitimate problem of Positive science; and Positive science may not safely invade such a question as the regeneration of society, since that is a legitimate problem of theology; and neither may safely invade such questions as the modes or relations of matter and spirit, since those are legitimate problems of metaphysics. Only when they shall have together accomplished their respective missions will the world be in possession of one homogeneous body of truth.

The theologian, in like manner, may only find in this system a fresh illustration of the tendency of depraved reason to dispense with the idea of God. Such is the perversity of man's intellect, that if able to account for the creation on any other theory than that of a Creator, he will disregard even the evidence of intuition and revelation. Hence we have that glorious idea, without which history were a blank and the world a wreck, represented to us as a mere product of the speculative propensity, to be traced back to its origin in savage superstition, and even in a supposed nascent theologizing among "some select animals," and then, in its mature form, to be treated as a mere tentative hypothesis, which the race is already in haste to abandon. But we need not fear that any amount of science and art could ever enable man, either in theory or in practice, to do without a God. The Deity is not so meagre in His resources, nor has He constructed the existing universe on such a diminutive scale, that His creatures can ever get beyond the necessity of admitting their ignorance and helplessness. Science after science may push its adventurous way into the arcana of nature, but it will only be to return with tidings of still unexplored regions of truth which it has not dared to invade even with the footsteps of a conjecture. Every earthly branch of knowledge might be carried to perfection, until the whole problem of the planet should be

solved; but there would still remain innumerable other orbs, of whose genesis and apocalypse we could not form so much as a conception. Philosophy might have dived down toward the eldest secrets of creation, and mounted up toward a solution of its whole complex enigma; but there would still remain even then the Creator Himself, capable of making and unmaking universe after universe to all eternity. Never, while man is man and God is God, shall mystery cease to hover between them, as at once a stimulus to the curiosity and a barrier to the pride of human reason. Before the seraph and the sage alike, is it the glory of God to conceal a thing.

CHAPTER III.

THE ABSOLUTE PHILOSOPHY OR THEORY OF OMNISCIENCE.

HAVING discussed the claims of the Positive Philosophy to an exhaustive theory of knowledge and complete system of the sciences, we proceed to consider that opposite theory and system, known as the Absolute Philosophy. It has been brought to a curious issue in the course of modern thought and research. Two rival schools, founded in different nations, and headed by the most powerful thinkers of the age, are pitted against each other upon the question whether such a philosophy is possible. The German philosophers not only include it among the legitimate pursuits of the human mind, but rank it at the very head of the sciences, as being their source, and embracing their whole content. The English philosophers, on the contrary, labor to prove it wholly illusive and futile, and insist upon limiting all rational research to the sphere of finite phenomena: while the French philosophers would seem to be more divided among themselves, both tendencies having been developed in an extreme form by the systems of Cousin and Comte. The Absolute Philosophy and the Positive Philosophy, or the Philosophy of the Infinite and the Philosophy of the Conditioned, as the opposite doctrines variously claim to be called, are in fact becoming the two poles of modern speculation, toward which, with different degrees of divergence, advanced thinkers in all lands are rallying. For so does thought from having been national grow to be catholic, and philosophy vindicate herself as the daughter of humanity.

What is more singular, the religious party cannot be said to have fairly committed itself to either extreme. In both schools the very same speculations are wielded for the defence and for the destruction of revealed theology. It is well known, for example, that the Hegelian philosophy of the Absolute became in the hands of one faction mere pantheistic infidelity, while another faction professed to find in it nothing less than a rational explanation of the most peculiar doctrines of Christianity. In like manner, the Hamiltonian philosophy of the Conditioned is taken by some late thinkers as the basis of a purely revealed divinity, while others are in haste to erect upon it, with the same logic, a mere scientific atheism. Between Marheineke and Strauss of the one school, or between Mansel and Spencer of the other, there are really more serious differences than between the schools themselves; so diversely has each master been interpreted by his disciples. We by no means infer from this that the whole controversy is harmless or useless, but rather take it to be illustrative of an axiom dominant through all the sciences—metaphysical as well as physical—that in each of them may be found antagonistic theories neither of which is wholly irreconcilable with Scripture, but which, by their own mutual collisions, are destined to issue in its support and illustration. There is, indeed, too much truth, as well as error, involved in these formidable conflicts between the giant intellects of our time for the Christian theologian to think of either despising or disparaging them.

The whole subject, it is true, is both abstruse and hackneyed, and many, no doubt, have already retired from it as a mere labyrinth of wordy notions, into which whoever enters only becomes the more bewildered the farther he wanders. We are not so rash as to think of attempting, at this late day, any original route over the trodden field; but, it may be, that by taking a position somewhat above and beyond it, we shall not only gain a fresher and more comprehensive view, but be able at length to connect and complete the researches of other explorers. In other words, could the whole question be sifted from the literature which has been accumulating around it, and all possible as well as actual opinions respect-

ing it exhibited in some exhaustive synopsis, we should then have before us the materials for a final judgment.

Now it will be found that there are five, and only five, distinct questions which can logically be raised in reference to the Absolute: 1st. Is it conceivable? 2d. Is it credible? 3d. Is it cognizable? 4th. Is it revealable? 5th. Is it demonstrable? We name them in the order of their importance, and propose to pass briefly through the series, affirming each as the basis for affirming the next, until we reach the last, in which we hold that philosophy is destined to rest as the goal alike of reason and of faith.

The first problem relates to the conceivability of the Absolute. It is not whether the Absolute exists really and ideally, nor yet whether we conceive it as it really exists, but simply whether we can conceive it at all, in any form or to any extent. Is the Unconditioned an object of legitimate thought? Does the mind act illusively and impotently or sanely and vigorously when it strives to think of the Infinite?

This question is obviously fundamental to both religion and science, and strangely enough, has been answered negatively by the partizans of both interests. The religious wing of the Hamiltonians, while denying the conceivability of the Infinite, admit its credibility, and even maintain that it becomes an object of faith precisely because it cannot be an object of thought, or that faith is complemental to thought in practically apprehending it. "By a wonderful revelation," says Hamilton, "we are thus, in the very consciousness of our inability to conceive aught above the relative and finite, inspired with a belief in the existence of something unconditioned beyond the sphere of all comprehensible reality." And Mansel, on the ground of the same distinction, endeavors to conserve the interests not merely of piety, but of apologetics, by arguing that rationalism destroys itself in the very effort to think what cannot be thought, but must be simply believed. "We are compelled, by the constitution of our minds, to believe in the existence of an Absolute and Infinite Being,—a belief which appears forced upon us, as the comple-

ment of our consciousness of the relative and finite. But the instant we attempt to analyze the ideas thus suggested to us, in the hope of attaining to an intelligible conception of them, we are on every side involved in inextricable confusion and contradiction."

If our present argument were only with this division of the school, it would be enough to object that the reasoning, even if sound, must defeat its avowed aim. Like some blunderbuss whose rebound is more destructive than its projectile, it would prove entirely too much for all parties. Instead of conserving a revealed theology by destroying rational theology, it would simply undermine both, and render science and religion alike nugatory.

For what other effect could it have than to annihilate all faith, as well as thought, in respect to the Absolute. If the existence of an Infinite and Absolute Being is as inconceivable as that of a "circular parallelogram," it is surely quite as incredible. The incognitable cannot be other than also the incredible, since any mental object which contravenes the laws of thought must also contravene the laws of faith. He who dreams that he believes what he does not or cannot think, neither thinks nor believes at all, but only dreams. And when sane and waking men are found actually attempting to draw square circles or round squares, we may expect to find them believing in an Absolute, their conception of which is a mere bundle of contradictions, or "fasciculus of negations, bound together by the aid of language," but destined, like a torpedo, to explode at the touch of analysis in glaring absurdity.

It is no escape from this to distinguish the cogitable from the existible, and argue that "the impossible to thought" may still be "the possible in reality." We are not maintaining that our thought is a condition or criterion of existence, but simply that it is a condition or criterion of our faith as to what exists. The credible, if not bounded by the conceivable, is at least concentric therewith. If any choose to affirm that round squares or square circles are really possible in the sphere of objective existence, we insist that to us they are not credible, because not even conceivable; and, in like

manner, that our faith must revolt with our thought from an Absolute which is apprehended as self-contradictory.

Neither will it avail to say that belief in the infinite is a spontaneous act of the mind into which thought commonly does not enter, or which is compulsory upon us in spite of any thinking to the contrary. We doubtless have some intuitive convictions which no sophistry can shake, as, for example, our faith in the existence of an external world; but none of them, when encogitated, will be found to involve a negation or destruction of thought. Otherwise it would appear that we are subsisting upon plain absurdities with a nature divided against itself, or that we are constitutionally compelled to believe what, so soon as we think it, we are constitutionally compelled to disbelieve.

The whole argument, indeed, of the Hamiltonian divines, simply destroys itself by reducing them to a choice of inconceivabilities; or rather by developing, as an alternative, two other inconceivabilities, quite as revolting and absurd as the one they have alleged. We may retort, with their own favorite logic of contradictories: 1st. That it is inconceivable that we could believe what we cannot believe; and, 2d. That it is doubly inconceivable that God should be both the author and object of such impossible belief.

We do not, however, here insist upon this refutation, as it would anticipate our second problem, and is, moreover, conclusive only against one wing of the school. By far the most consistent party are those who boldly accept the issue, to which they are driven by their own logic, of a thorough scepticism, religious as well as scientific, in respect to the Infinite, and a consequent restriction of faith, no less than thought, within the bounds of the finite. And it is only when the reasoning assumes such a portentous import that it merits examination.

It may be questioned, however, whether there ever has been a metaphysical controversy in which such brilliant dialectics have been displayed, with no other effect than to leave truth worsted at the hands of logic. What unsophisticated mind imagines or spontaneously grants that its idea of the God it adores is a mere negation or absurdity? And yet,

once admit the specious premises of these logicians, and reason is drawn from her moorings into an insidious circle of thought which contracts as it proceeds, until, in spite of her recoil, she is engulfed amid the wildest contradictions. At one moment, it is maintained that our minds are finite, and therefore cannot conceive the Infinite; the next, that the conception of the Infinite, when analyzed, proves self-contradictory; and in fine, that these two propositions so corroborate each other as to force us into the dilemma of either believing the Infinite to be inconceivable or conceiving it to be unbelievable. We can escape the revolting conclusion only by strictly questioning each term and premise from which it is drawn.

Let it be observed that there are three distinct senses of the inconceivable: 1st. That of which we can have no notion whatever, which we cannot even attempt to think, but spontaneously pronounce unthinkable, or beyond the province of thought. 2d. That of which we can form only a self-contradictory notion, which we may attempt to think, but in the effort find to be destructive of thought. 3d. That of which we can form only a partial, yet still positive and consistent notion, which we may vigorously endeavor to think, but which will still baffle and overmaster thought, when tasked to its utmost capacity. It is only in this last sense that we admit the Infinite to be inconceivable. We do have some notion of an Absolute God, and a notion which, however meagre it be, is at least free from "contradictory opposites."

At the outset, it should not be forgotten that the conceptive faculty is not the same in all minds or moods, and must vary with the matter or object upon which it is exercised. When that object is the Infinite, though the most capacious mind, in its most elevated mood, should strive to conceive it, and though the conception formed, as far as it goes, should be an energetic affirmation of thought, yet must it nevertheless fall short of the transcendent reality. But such, also, must be our conception of the finite. The material universe, for example, as far as already explored, involves magnitudes of time, space, and force, quite as overwhelming as the infinitudes of divine eternity, immensity and omnipotence; or if

there be any difference, the latter ideas are really more positive and vigorous, if not more complete and precise, than the former, owing to the fact that they have contrasts in our own personal consciousness, by which they are thrown into relief as objects of distinct apperception, rather than of sensuous imagination.

So long, then, as the inconceivable is held to be merely that which transcends thought in its legitimate exercise, there need be no argument; but when it is defined to be that which actually contravenes thought, or that which thought itself excludes by its own action as self-contradictory, and to it impossible, then a very different question is presented. While admitting that our conception of Deity is, and must ever be, only approximate, we must still insist that, besides being positive, it is perfectly congruous or consistent, and that the contradictions alleged to be involved in it are purely imaginary. This will appear, if we carefully sift the several notions of infinity, absoluteness, and causality into which that conception is analyzed by these thinkers, and which are pronounced by them to be irreconcilable.

Now, it is admitted even by Hamilton, that the Absolute and the Infinite are, from one point of view, two consistent, though distinct phases of the Unconditioned: "The unconditioned, in our use of language, denotes the genus of which the Infinite and Absolute are species. The term absolute is of a twofold ambiguity, corresponding to the double signification of the word in Latin: 1. *Absolutum* means what is freed or loosed; in which sense the absolute will be what is aloof from relation, comparison, limitation, condition, dependence, &c. In this meaning the Absolute is not opposed to the Infinite. 2. *Absolutum* means finished, perfected, completed; in which sense the Absolute will be what is out of relation, &c., as finished, perfect, complete, total. In this acceptation—and it is that in which, for myself, I exclusively use it—the Absolute is diametrically opposed to, is contradictory of, the Infinite." It is therefore only when the words are taken in their secondary and less obvious sense, that it is pretended they are conflictive. We may, however, not only choose for ourselves the primary definition as being more pertinent, but also object to

the secondary as faulty, as, in fact, presenting merely "two opposite poles of the conditioned," rather than two distinct phases of the unconditioned. The "finished" and the "unfinishable" plainly involve some material image, as the subject of which the *quasi* infinitude and absoluteness are to be predicated, and if admissible in our conception of the universe, must obviously be excluded from that of Deity.

Both Hamilton and Mansel, and after them Spencer and Fiske, have persistently argued that thought itself is finite, and therefore cannot traverse the Infinite, and that consciousness involves the relation of subject and object and therefore cannot, without contradicting itself, embrace an absolute object out of relation to its own subjectivity. But such logical puzzles do not occur to common minds, and are practically refuted by an immense number of philosophic intellects to whom they seem little more than a mere play upon words. The fact remains, that, in conceiving of the Infinite and the Absolute, the thinker simply includes himself in the totality of existence, without for one moment imagining that he stands apart as a relative subject distinguished from an absolute object, still less as a creature existing independently of the Creator. And to say that such thought is impossible or absurd would be like saying that one could not conceive of the house he inhabits without going outside of it.

All the contradictions which have been alleged, disappear the moment we take the Absolute to mean that which is absolved from any necessary relation to the finite, and the Infinite that which is unlimited, in comparison with the finite; the former being a difference in kind, and the latter in degree, between the human and the divine spirit or person. The two notions, so far from being oppugnant, will, then be found complemental. In the supporting idea of personality as their ground and cement, they at once cohere and coalesce to form one conception. Though our thought might indeed be baffled and exhausted, were it to pursue either of them apart, yet while endeavoring to unite them, it encounters no contradiction between them, and instead of withering up and collapsing amid blank negations, really finds itself grasping the most complete positives within its reach. The Absolute and

the Infinite are, in fact, but divine attributes or properties which we contemplate in another Person, as the contrasts and correlates of our own human dependence and finitude; and the consistency of the two latter ideas is not more obvious in our consciousness of self than is the consistency of the two former in our conception of God as an objective reality. We simply apprehend ourselves as at once finite and dependent, and then, as opposed to this, affirm in thought the possibility of Another who is at once infinite and absolute. The two inconditionates, when thus defined, if they are partially inconceivable in the sense of surpassing thought, yet they are, at least, not utterly inconceivable in the sense of extinguishing thought; but are rather, when viewed apart, like asymptotical lines, which can neither meet nor clash, or, when viewed together, like concentric circles, whose very perfection precludes their conflict.

In like manner, it might be shown that the remaining notion of causality only adds to the consistency of the other two notions, when they are rightly adjusted one to another. Although an origination of the universe by an Infinite and Absolute Person, were it perversely conceived of by us as necessary, might, indeed, seem to violate both His absoluteness and His infinitude, yet when it is conceived as wholly voluntary, it can only, in our view, conserve and manifest them both, ensuring not less the dependence of creation than the independence of the Creator. In attributing personality to God, we include that volition from which we have our idea of causality, and associate with it, in contrast with our own conditioned will, His infinite energy and absolute purpose.

Thus the three ideas really demand and support each other; and so far from being mere "counter imbecilities of the human mind," are, in fact, the most consistent energies of which it is capable. We never think so positively, vigorously, and coherently, as when we steadily grasp and combine them in one conception; and of all conceptions that we can frame, there is none which so satisfies, while it exhausts the capacity of thought. When contemplating an Infinite and Absolute Creator in relief from His finite and dependent

creation, our ordinary consciousness is released and expanded to the utmost in the effort to apprehend the glorious object. As the mariner, sailing out from land into the shoreless ocean, we let go our hold upon the conditioned, and turn away to confidently affirm against it the unconditioned, losing even ourselves the while in the infinite, the absolute and the eternal. It may then be said, not less philosophically than devotionally, that the soul is forsaking the things of time and sense to be wholly occupied with God, and, like an eagle basking in the empyrean, becomes absorbed in the vision of ineffable glory.

It has now become apparent how the supposed contradictions have arisen. In part they are owing to a perverse habit of treating these divine attributes as mere abstractions, or predicating them of some vague notional substratum of the universe, or of the universe itself, rather than of a conscious spirit or person, distinct from the universe; and also, to a failure in distinguishing, in kind as well as degree, the divine person from the human. So long as we endeavor to conceive some dead substance, or blind force, or bare cause, matter, space, time, the universe, in short, aught but a personal God, as infinite and absolute, or so long as we endeavor to conceive a God who is infinite and yet not absolute, a mere *anima mundi*, or a self-developing world, we cannot but involve ourselves in absurdity, for the simple reason that we are vainly striving to merge the spiritual in the material, the unconditioned in the conditioned, the Creator in the created. But so soon as we admit the idea of a person or spirit in place of a mere substance, or cause, or vague being, and then add the further ideas of a personal independence in contrast with our personal dependence, and an infinite degree of all personal attributes in contrast with the finite degree in which we possess them; at once the whole group of else contradictory notions resolves itself into logical unity, and we have before us a conception, which, beyond all others possible to the human mind, will stand the test of analysis. The revealed Jehovah is, in fact, identified as the only rational Absolute, Infinite, and First Cause; and we can pronounce it not more sound in theology than in philosophy, to conceive "a Spirit

infinite, eternal, and unchangeable, in His being, wisdom, power, holiness, justice, goodness, and truth."

Our conclusion, then, is, that while some modes of conceiving infinity, absoluteness and causality, may be contradictory, and while all modes of conceiving them must be more or less defective, yet that conception in which they are brought together as attributes of a Divine Spirit or Person, is not only a positive and congruous effort of thought, but, when compared with others, is the most logical which the mind of man can grasp.

The second problem relates to the credibility of the Absolute. Does it exist really as well as ideally? When we conceive it, do we conceive what actually exists? Does our subjective idea of the Infinite find support in any objective reality? Is the Unconditioned a mere magnificent abstraction, projected as the shadow of our own consciousness, or a glorious Person existing outside of our consciousness? Can we believe in such an Absolute and Infinite Spirit as we have conceived?

This question is also fundamental to both religion and science, and, in like manner, has sometimes received a negative answer from both parties. The whole religious wing of the Kantian school, while denying the credibility of the Absolute, have maintained its conceivability, and even insisted that it becomes an object of thought simply because it must cease to be an object of faith or that our implicit faith in it as an objective reality expires through the explicit thought of it as a mere subjective idea, generalized from the finite and contingent. It was by means of this distinction that some devout disciples of Fichte, Schelling and Hegel, were fain to deify the abstraction of universal being, to worship the All-One as God, and to erect a kind of speculative theology upon the ruins of all practical religion.

Of such a religious system it would be enough to say that it cannot accomplish its own aim. Whatever other purpose it might serve, it could not sustain and foster the sentiments of religion. The adorable must at least be the credible. We can only worship what we believe to exist, as exterior and

superior to self; and if the Infinite cannot be believed to exist, within our finite self or in finite nature around us, then it can only be worshipped, if worshipped at all, as an extra-human and extra-mundane reality, surpassing both man and nature, in power, wisdom and goodness. When any pantheistic idealists are found consciously loving and adoring the abstractions of their own understandings, we may accept for genuine religious feeling, their delusive apprehension of an Absolute Deity produced by human intelligence alone or by the logical development of an impersonal, universal Reason.

Without pursuing this argument, however, we pass to the more consistent Kantians, who would not only ignore the Absolute as an objective reality, but retain the subjective notion or idea merely as a necessary postulate of philosophy, and so present the simple alternatives of idealism or realism in science and atheism or theism in religion.

To any but a thoroughly artificial mind such a question might, indeed, in its very statement, seem too revolting as well as absurd, for serious discussion. How warped the intellect that would reduce the idea of God, that idea which, beyond all others, has operated upon mankind with the force of reality, to a mere abstraction or regulative notion! And how sophisticate the conscience that for the worship of such a Being would substitute mere enthusiastic love of nature, or proud apotheosis of self! And yet, for such a barren crown as this, a host of astute dialecticians have entered the speculative arena, and striven with pitiless logic, in the face of reason, instinct, and common sense. Foremost of these champions of the pure idealism came Fichte, annihilating all objective reality; then followed Schelling, annihilating all subjective reality; at length appeared Hegel, annihilating both as distinct realities, and preserving only their residual relations; and meanwhile have appeared Shopenhauer, Hartmann, and Bahnsen, undermining all these systems as the mere human conception of a universe which has its root in blind force and its flower in conflicting will and reason. We shall best rebut such perverse disputings by simply asserting against them the several grounds of that catholic realism which underlies alike all science and religion as the only rational postulate of philosophy.

In the first place, a firm basis for the credibility of the Absolute has been already laid in our doctrine of its conceivability. We do not mean that it is of necessity credible, simply because it is conceivable, but only that its conceivability is an indispensable condition of its credibility. It could not be believed if it could not be conceived. Belief in it involves no obvious or latent contradiction, but is rather a belief, to say the least, the contrary of which cannot be proved.

In the second place, it takes rank as an instinctive conviction or primary belief. Instead of resulting, like some convictions, from mere speculation, or reasoning, or education, it has the marks of spontaneity, universality, and necessity. The moment the Infinite is conceived, it is instinctively apprehended to be objectively real. As in the very act of conceiving an external world all unsophisticated minds spontaneously attribute a reality to it from which they cannot escape, so in the very act of conceiving a god, they spontaneously attribute to it, not bare reality only, but personality, that form of reality suggested by their own consciousness, and the most substantial of which we can have any notion. It is only by some subtle logic that either of these primitive convictions ever becomes dissipated. The feeling of dependence upon an exterior and superior somewhat, which they call God, distinct alike from self and the world, is found in all mankind, and may be classed among the normal sentiments of the race.

In the third place, such belief, beyond all other instinctive convictions, proves to be indestructible and cumulative. The idol, or myth, or abstraction, in which it has expressed itself, may be destroyed, but it will still survive, and through some new and more consistent conception of the great Reality, feel after Him, if haply it may find Him. Even when it is brought reflectively into distinct consciousness and logically investigated, it not only asserts itself against all adverse reasoning, but admits of elucidation and ever-growing proof. Argument after argument may be accumulated to show that our spontaneous apprehension of God as a real existence is no illusion, until faith shall amount to assurance, and instinct be exalted into knowledge.

In short, philosophically speaking, the credibility of the Absolute, as of all objective reality, may be said to be in exact proportion to its conceivability. That we can no longer believe in the pagan or classic deities as the true and living God is simply because we can no longer conceive them as such. And if our conception of an Infinite and Absolute Creator can be shown to be absurd or self-contradictory, then we must either wholly renounce our faith in such a being, or we must seek new support for our faith in some conception which we can affirm to be sound and consistent, as well as supported by a correspondent objective reality. We are, however, trenching upon our next topic.

The third problem relates to the cognizability of the Absolute. Does our subjective idea of the Infinite correspond to the objective reality? In so far as we can conceive it, do we conceive it as it really exists? Must our cognition of deity be wholly illusory, like the vision of an object by a distorting eye or through a discolored medium? or may it become clear and exact, as far as it extends, however limited? Can we know the God in whom we believe?

This question, too, we must insist, is equally momentous in both its religious and scientific bearings. The attempt is indeed made, by both Kantians and Hamiltonians of the religious side, to distinguish between a speculative and regulative knowledge of the Absolute, or between its cognizability and its revealability, and while denying the former and retaining the latter, to erect the revealed theology on the ruins of all rational theology. It is argued by such thinkers that, as the Infinite God cannot be conceived, but must be simply believed, He is therefore of necessity, in accommodation to our faculties, revealed to us in a human form, under gross finite images, and that this revelation, though sufficient to regulate our religious worship and practice, neither itself amounts to a true knowledge, nor can by any effort of reason be made to yield aught toward a science of the absolute.

But it may be said of such, as of all indirection, that it creates worse difficulties than it attempts to solve. We do not speak merely of the intellectual and moral duplicity

which it would substitute for an unsophisticated faith in the inspired representations, but also of its fatal bearing upon inspiration itself. A God that could not be known, could not be revealed, for the simple reason that the revealing process from without involves the cognitive process from within, or is itself but the making known to, and through, the human intellect, what would else be unknown. Surely if, like the Samaritans, we "worship we know not what," or, like the Athenians, we worship only an "unknown God," then, revelation has become to us either useless or worse than useless. Our ignorance, in so far as it is unconscious, is little better than heathen blindness; or, in so far as it is conscious, has nothing to boast over the classic idolatry. Let such "too superstitious" Christians receive as a rebuke what the Apostle to the Gentiles first uttered as a gospel, "Whom ye ignorantly worship, him I declare unto you," and learn anew that lesson of the great Teacher to those who had corrupted an existing Scripture: "We know what we worship: God is a Spirit: and they that worship him must worship him in spirit and in truth."

It was charged by Hamilton, that Kant "had slain the body, but had not exorcised the spectre of the Absolute; and this spectre has continued to haunt the schools of Germany even to the present day." But it may now be charged upon Hamilton himself, that in his zeal to exorcise the spectre, he has but mangled the body of the Absolute, and left the remains of philosophy in the hands of infidels. Between the Hegelian universe of bare ideas and the Comtean universe of dead facts, there is, in sooth, as little to choose as between a ghost and a corpse. We shall escape both horrors only when the real and the ideal absolute are combined in Jehovah, and science as well as religion has learned to recognize a living Creator, inhabiting and controlling His whole creation.

The more consistent disciples of the agnostic school, instead of attempting any vain distinctions, maintain the Absolute to be wholly incognizable, either through reason or through revelation, for the purposes of philosophy or of piety, and, renouncing all efforts to apprehend or represent the unknown cause of the universe, follow out their logic to the

extreme of a thorough nescience and neglect of the Godhead. In other words, while admitting the possible existence of the Infinite, they insist that it can neither be known nor worshipped, and that finite phenomena alone can become the object of science or of practice.

By far the most logical application of this doctrine, which the world has yet seen, or is likely to see, is to be found in the positive philosophy and religion of Comte. In that system the theory of the Unknowable is driven with remorseless rigor into the abyss of a scientific scepticism. Not only is the supposed Creator of the universe ignored as incognizable, but the whole existing conception of such a being is accounted for as in part a mere personification, and in part a mere hypothesis, which has grown out of the historical development of religion and science, and which originates in a primitive tendency of mankind to conceive external realities on the conditions or in the light of their own consciousness, under a human form, as animated with will or personality. Already this anthropomorphic tendency has impelled them through the successive phases of fetichism, polytheism, and monotheism, and the myth of a Jehovah which still survives in the vulgar mind, will only have become obsolete, when a perfected humanity, through science and art, shall have learned experimentally to realize its own ideal of power, wisdom, and goodness, instead of personifying and worshipping it as a Creator and Preserver of the universe, or identifying it with the unknown and unknowable Cause of phenomena.

If it had been intended, by this system, to ingeniously invert every axiom and instinct, it may be doubted whether the success could have been more complete. In what sound mind has the notion of a First Cause been thus resolved into a scientific fiction or devout self-personification? And how morbid must be that horror of blindly worshipping God in the form of man, which can only relieve itself by knowingly worshipping man in the form of God! And yet to compass these results, the whole field of knowledge has been laid under contribution, and the march of history toward them clothed with the precision of an inflexible law. The sciences, it is inductively shown, from their structure and development,

are destined to destroy and ignore the very idea of Deity, and in its place to substitute that of humanity, as the only reality which can either be known or intelligently worshipped. Preposterous as may seem such conclusions, we cannot escape them unless we boldly seize and sift the premises from which they are deduced.

And if we should grant that the Absolute is incomprehensible, it would not follow that it is incognizable. Our knowledge of the Infinite, though it can never be exhaustive or complete, may still be real, as far as it extends. We are not reduced to the bare alternatives of omniscience or nescience. Although unable to know everything, we still may know something in respect to the reality we call God, and this knowledge, however limited, may be a positive advance beyond ignorance or error. If it is partial and liable to correction or corruption, so also is all other knowledge. The same reasoning, indeed, which would assail the former must assail the latter, and, if successful, would only envelop all external reality in harrowing uncertainty. We could not tell whether the veiled Isis, before which we cowered, were spectre, fiend, or hollow nothingness; but would be full of

> "Blank misgivings of a creature
> Moving about in worlds not realized."

Let him believe who can, that the foundations of his consciousness are laid in delusion and imposture. We may grant that in one sense we must ever know the Infinite as still passing knowledge, but surely we need not on that account despise or renounce what knowledge we have.

Neither would it follow that the Absolute is incognizable, if we should admit that our conception thereof is in some respects human, derived from our own personality, or howsoever derived, found analogous to that personality. We may fearlessly accept the imputation, and still insist that the Incomprehensible Reality behind all phenomena as their ground or cause, is actually what we conceive it to be, a Spirit, having, like us, spiritual attributes, but, unlike us, having them infinitely and absolutely. What if it be true that we are constitutionally impelled to apprehend and represent the Original Cause of phenomena as an intelligent Creator, and ourselves

as His intelligent creatures? It is one thing to say that we have made to ourselves a god in the image of man, but quite another thing to say that we have ourselves been made in the image of God. On the latter supposition, theism becomes part of the natural realism of mankind, and, instead of being classed with outworn superstitions, may be taken as that true knowledge of the true God, of which all pantheism, polytheism, and the grosser monotheism, are but counterfeits and approximates.

Thus defined and guarded, the cognizability of the Absolute may be maintained by several considerations:

And, in the first place, still resuming and carrying forward our previous reasoning, we affirm it on the grounds of its conceivability and credibility. As all knowledge proceeds from the thought, through the faith of the thing apprehended, and so involves both thought and faith as its preliminary conditions, we have but to show, as has been done, that the Infinite may be conceived and believed, in order to show that it may also be known. In other words, the impossibility of such knowledge cannot be proved without first proving the impossibility of such conception and belief, or without assuming a science of the possibilities lying beyond all conception and belief; in short, without assuming omniscience itself. He must have known God completely, who would prove that we cannot know Him partially, or that, as far as we know Him, we do not know Him truly.

The advocates of the so-called relativity of knowledge have quietly assumed what they cannot prove, that our finite cognition of the Infinite Reality called God, is not based upon a real analogy. By their own showing, they cannot go behind phenomena and prove the contrary. For anything they know, the Original Cause of the universe may be a Divine person to whom we bear an approximate likeness. As actually manifested through the phenomenal world, the Absolute is recognized as at least possessed of intelligence, like our own, though infinitely greater in degree. Whoever denies this, can only be characterized as an atheist. If one of the conscious watches, imagined by Mr. Spencer, should declare that the watchmaker did not even have brain enough to make a

watch, it would deserve all the vituperation which any other more sensible watches could heap upon it.

In the second place, such cognition has the certitude appertaining to other cognition. We may know God, at least as certainly as we know the world. We may know that we know Him. As we cannot suppose that external realities in general are positively misrepresented to us in the process of our own intelligence, without thereby supposing that our whole nature is rooted in falsehood, and all knowledge mere delusion, still less can we suppose that the intimate and homogeneous reality of God is so misrepresented to us, since that would impugn the veracity of consciousness where its testimony is most direct, explicit and essential. In such knowledge we are in fact in immediate contact with an Infinite Spirit, from whom our finite spirits cannot escape, whithersoever they may flee; while in all ordinary knowledge we are cognizing existences indefinitely extended away from us in space and time, and presented to us under endless variety and vicissitude. Surely if directness, simplicity, and purity, in our apprehension of reality, be marks of true cognition, we may rely upon what we can know of God, however little it be. We say nothing as yet of the veracity of revelation as combined with the veracity of consciousness in affording a still farther and peculiar ground of certitude; nor of a subjective illumination as ensuring, in connection with that objective revelation, the ecstatic vision of the Absolute.

In the third place, such cognition imparts oneness and consistency to all other cognition. We cannot know the world as a whole, unless we know somewhat of God. An Infinite and Absolute Person, whose intelligent will is expressed through the laws of all phenomena as their first and final cause, is a fundamental, necessary postulate of science, without which it would remain a mere mass of fragmentary knowledge, devoid of rational coherence and unity. As the universe, the totality of existence, acquires intelligibility, becomes a cosmos instead of a chaos, only when it is viewed as the creation of a Creator, so the sciences can only be resolved into a system by means of theology. The law of their development is precisely the reverse of that maintained by the

Comteans, as might be shown, both from their structure, and from their history.

In fine, the cognizability of the Absolute, like that of all other reality, is proportioned as well as conditioned by its conceivability and credibility. Only when we shall have lost all thought and faith can we also lose all knowledge of God. Though our conception of Him must indeed be human, and our belief in Him mainly spontaneous, yet both these are themselves a spiritual endowment and heritage, which may be either wasted or improved. They are, in fact, but the image of the Creator constitutionally impressed upon His creature. As the boundless cope is mirrored in a dew-drop, so does man reflect even Deity in miniature; and according as he becomes conscious of that finite similitude, may he become cognizant of the Infinite Original. He may indeed have lost the likeness, and with it the knowledge of God in idolatrous superstition; he may even have obliterated both by sophistical philosophy or moral debasement; but he may also be "renewed in knowledge after the image of Him that created him."

Let us not, however, forestall our remaining discussion. We have maintained that a science of the infinite is as feasible as a science of the finite, and that, in fact, the former is indispensable to the latter. But there is this important difference between them:—Whereas, in our cognition of the eternal world, the subject is cognitive while the object is simply cognizable, yet in our cognition of God, both subject and object, the finite spirit and the Infinite Spirit, are interchangeably cognizable and cognitive. According to the strict absolutists, the finite spirit may even become identical with the Infinite Spirit, and theology be actually absorbed in psychology. According to the strict conditionists or positivists, the two are heterogeneous, and theology must therefore be isolated from psychology, and abandoned as a region of pure faith or mere conjecture. Between these extremes lies the true doctrine, that the finite spirit and the Infinite Spirit, although distinct and unequal, are nevertheless homogeneous and inter-cognitive, and consequently that psychology and theology are concentric, and ideally or ultimately coincident

spheres of knowledge and faith, reason and revelation, science and omniscience. In other words, our knowledge of the Creator, in distinction from our knowledge of the creation, is such as one person may have of another person through a process of mutual intelligence or recognition. We sustain personal relations to an Absolute mind, who is Himself cognizant as well as cognizable, and whom, though, now we know only in part, we shall yet know even as also we are known.

This distinction brings us to the verge of the next general topic propounded, and by means of it we now emerge upon ground more open and familiar than that over which we have been groping.

Our fourth problem relates to the revealability of the Absolute. Can such a Spirit make himself known to us, as well as be known by us? May the Infinite mind disclose itself to the finite mind? Must all our knowledge of Deity be derived from our subjective reason? or may it be purged and extended by an objective revelation? Has the "unknown God" been made known?

In reference to this question, the attempt has been made to disjoin the sphere of science from that of religion. One religious division of Hegelians, though nominally adhering to the revealed Jehovah, still pursued the rational Absolute independently, with more or less rigor, whithersoever their logic would take them, and some even maintained that the former is only to be retained as a kind of exoteric and mythical deity of the vulgar, while the latter alone is that pure reality discerned by the privileged circle of philosophers. It was with such subtle ambiguity that the most familiar dogmas of Christianity were held as philosophic formulas. The trinity of Father, Son, and Spirit, became travestied under the triplicity of the dialectic process; the incarnation was viewed as the reason embodied in all mankind, though best exemplified in the individual Christ; and the atonement as the reconciliation of this finite reason with the Infinite Reason.

Of this covert rationalism it is enough to say, that it is fatal to the interest it pretends to preserve, and all the more mischievous because of its orthodox disguise. In connection

with such a thoroughly rational theology, there could not be any strictly revealed theology. If the God of Scripture is to be taken as a mere symbol, or witness, or harbinger of the God of philosophy, all revelation, in any proper sense of the term, is undermined. For how could the revealable be at the same time the discoverable? or that which might have been positively concealed by the Infinite Mind be disclosed by the finite mind? "Who hath known the mind of the Lord? or who hath been His counsellor?" It was this impious attempt to prejudge, on grounds of mere reason, the content of revelation, which gave to Germany a piety professing the form of godliness, but denying the power thereof, and multiplied in her churches the false apostles of another gospel, which is not another.

And hence we must regard as by far the most consistent rationalists those who avow hostility to evangelical truth, and boldly proffer their philosophical atheism or pantheism in place of the biblical theism. What was it, indeed, but the logical issue of pure rationalism which Christendom beheld, when the whole historical as well as doctrinal system of Scripture was assailed by the criticism of Strauss, and its Jehovah exhibited as but a Hebrew Jove, its Jesus as but a Jewish Socrates, and even its gospel as only a Christian legend. Malicious as the caricature seemed, yet it had at least the merit of candor, and exposed the seeming angel of light in the naked deformity of sin. Christianity is but betrayed with an Iscariot kiss by a philosophy which couches infidel sentiment in Scripture phrases and ancient formulas; but when the issue is boldly made between a god of reason and a god of revelation, then we know where and how to meet it.

And, in the first place, that the Absolute is revealable ensues upon our whole previous argument. If it could not be known, and known as a person or spirit, it could not be revealed, but since the Reality is both cognizable and cognitive, a positive and objective revelation is not impossible. Only upon the assumption that the unknown God is Himself unknowing or unknowable, can it be argued that it is impossible either that He should be made known, or should make Himself known.

In the second place, there is in human reason a necessity for such a divine revelation. We do not mean that all rational theology is impossible or nugatory, but simply that it must be imperfect and erroneous until corrected and matured by revealed theology. This may be proved: 1st. By the nature of those problems with which any theology, whether rational or revealed, must deal, but which mere reason itself cannot solve; such as the character, constitution, and policy of the Creator, the origin and object of the creation; and the relations and destiny of the creature. 2d. By the history of rational religion, which abounds in idol and mythical deities, in fabulous cosmogonies, and in the crudest notions of futurity. 3d. By the history of rational philosophy, which, whenever it has cast off the guidance of revelation, has groped into the darkness of atheism, pantheism, fatalism. scepticism, and nihilism.

In the third place there is in human reason a capacity for such a divine revelation. All rational theology craves a revealed theology, as its legitimate sequel and complement. This may be proved: 1st. By the adaptation of the finite mind to an Infinite mind, and its susceptibility to education through an objective revelation distinct from that made in nature and providence. 2d. By the universal reminiscence or presentiment of a revelation, which is expressed in all heathenism; and, 3d. By the germs or rudiments of such a revelation, in which all rational philosophy and natural religion abound.

In the fourth place, that divine revelation which has been given meets both the necessity and the capacity of human reason. This may be shown: 1st. From its form, which, having been progressive, scriptural, and miraculous, is suited to the rational constitution of mankind. 2d. From its contents, which not only elucidate and confirm whatsoever is sound in rational religion, but, in consistency therewith, contribute a complementary system of doctrine bringing a peculiar self-evidence of its own; and, 3d. From its effects, which have ever been to correct, stimulate, and mature all rational philosophy.

In a word, we may conclude that there can be no truly rational theology without a revealed theology as its counter-

part and supplement. Until God makes Himself known to us by some objective revelation, in some apocalypse more direct and personal than His mere creation and providence, our knowledge of Him must remain partial and erroneous; while the actual addition to that knowledge by means of such divine communication has ever only had the effect of imparting to it greater unity, precision, and completeness. The Jehovah of Holy Scripture is in fact that sole Reality whereof all mythical and ideal deities are but harbingers and witnesses. As in Him the unknown God of heathenism is made known, and need no longer be ignorantly worshipped, so also in Him may the highest abstractions of philosophy, the Infinite, the Absolute, the First Cause, find rational support and consistency, and become objects of adoration no less than of science.

Such is the act of the Infinite Mind in its recognition of the finite mind, an act of revelation; but if we now inquire what must be the correspondent act of the finite mind in its recognition of the Infinite Mind thus revealed, or how the two are related on the ground of such mutual intelligence and intercommunication, we broach the next and last of the subjects to be considered.

Our fifth problem relates to the demonstrability of the Absolute. Can it be proved to be what it is revealed to be? May the God of Scripture be identified with the God of reason or of nature? or are the two irreconcilable? Must our revealed knowledge ever remain singular and separate? or may it be logically combined with our rational knowledge? Are the evidences of revelation only, or are also its contents, a proper subject of inquiry?

In reference to this question, a remarkable attempt has lately been made to unite science and religion upon a common ground of pure antilogy. The Hamiltonian divines, under the leadership of Mansel, maintain that both the revealed Jehovah and the rational Absolute, when logically investigated, are found to be equally self-contradictory, and, in fact, that the Reality which they suggest and prefigure can neither be revealed nor demonstrated, but can only be represented and believed. It is even argued by this thinker that the main

function of reason is to demonstrate the Godhead to be undemonstrable, and the only effect of revelation is to reveal it to be unrevealable. The so-called anthropomorphism and anthropopathy of Scripture are accepted as not peculiar to Christianity, but inherent in the very constitution of the human mind; and the doctrines of the trinity, the incarnation, and the atonement, if viewed as matter of faith, are held as sufficiently accurate to guide our worship and practice, but if viewed as matter of science, are no better than a sort of didactic representation, or divine epic, wherein the Father, Son, and Spirit appear as *dramatis personæ*, and perform the tragedy of Calvary on the scene of human history.

Of this refined dogmatism, what can we say, but that, like the covert rationalism before noticed, it jeopards the interest it would protect, and is only the more pernicious because of its pious intent. For if reason and revelation combined can yield us no real knowledge of God, or if it is the office of the latter to practice illusions which it is the office of the former to expose, in what respect are we better than the heathen or the sceptic? How much would there be to choose between such a dramatic Jehovah and the mythical Jupiter? Why not accept both as mere phases of a popular theology, which the learned are to outgrow and gracefully patronize? It is this specious effort to exalt reason by dragging revelation to its level, which has already in many an orthodox communion, led to a mere show of wisdom in will-worship and humility, and as it extends among the people, can have no other effect than to corrupt their minds from the simplicity that is in Christ.

And hence we regard as by far the most consistent dogmatists, those who frankly admit their hostility to rational research, and intrepidly press their biblical creed in the face of all human science. We are only amused now at the sturdy dogmatism which once repudiated, on Scripture grounds, the rotundity and motion of the earth; but it was at least honest and consistent, and drew the lines sharply between orthodoxy and heterodoxy. That were but a sorry championship of Christianity which would desperately end the battle with infidelity by springing a mine of common

absurdity under both combatants. But let the question simply be, whether the rational Absolute and the revealed Jehovah are reconcilable or irreconcilable, and then we can proceed intelligently.

And, in the first place, that the Absolute may be demonstrated, we maintain on the ground that it has been revealed. If it had been actually concealed from us, it could not, of course, be rationally investigated; but having been intelligibly disclosed to us, it may be brought within the purview of reason, to be either accepted or rejected, proved or disproved, held in opposition to other truths and facts or established in consistency therewith.

In the second place, there is in divine revelation a necessity for such a human demonstration. We do not mean that reason is either prior or superior to revelation, but simply that, although inferior and supplementary, it is nevertheless indispensable. This will appear: 1st. From the origin of revelation as a direct emanation from the infinite reason of God; 2d. From the aim of revelation as a direct communication to the finite reason of man; 3d. From the purport of this communication as conveying new truth, which must, sooner or later, in greater or less degree, be found rationally consistent with the old.

In the third place, there is in divine revelation a fitness for such human demonstration. On examination it is found to be susceptible of rational investigation and vindication. This appears: 1st. From its actual evidences, which, unlike those of false revelations, satisfy the demands of reason; 2d. From its actual contents, which present problems upon which reason cannot but be exercised; 3d. From its actual structure. which, as a mere fragmentary composition of facts, truths, and principles, devolves upon reason the task of their logical organization into a system.

In the fourth place, such a human demonstration is already in progress. The reconciliation of revealed and rational knowledge is now going forward, wherever the two are thrown into combination. It may be discerned: 1st. In all apologetic, exegetical, and systematic theology, which are respectively but so many attempts to demonstrate the evidences,

import, and harmony of revelation; 2d. In all rational theology, which, whenever pursued independently, though reverently, has but served to develop and elucidate problems propounded by revelation; 3d. In all the other rational sciences, which, whether physical or metaphysical, by their own normal procession in human history, are but logically unfolding the attributes of the revealed Jehovah, and demonstrating Him to be the only rational Absolute.

In a word, we may conclude that as there can be no rational theology without a revealed theology, so there can be no revealed theology without a rational theology. The two complement and support each other, and are both normally and ultimately coincident. They, in fact, present the same Reality; the one under a theoretical, and the other under a practical aspect; the one as an object of science, and the other as a subject of revelation; and neither could be disjoined without detriment to both. If, on the one hand, the rational Absolute can only be found in the revealed Jehovah, yet, on the other hand, the revealed Jehovah can only be demonstrated by means of the rational Absolute. Destroy reason, and there can be no revealed theology; destroy revelation, and there can be no rational theology; retain both as logically irreconcilable, and we must choose which theology to maintain against the other; but retain both as logically reconcilable, and then both theologies become like intersecting spheres, which cannot but ultimately coincide, or like opposite members of an arc, which must meet in a common support or mingle in a common union.

And the respective systems of science which are founded upon the two theologies must, likewise, stand or fall together. If, on the one hand, our physics and ethics are demonstrating the divine attributes, both natural and moral; yet, on the other hand, those divine attributes afford the only scientific basis of our physics and ethics. Moreover, while the rational division of the sciences, both physical and psychical, thus logically requires the support of the revealed theology; yet, at the same time, the revealed division of the same series of sciences as logically requires the support of a rational theology. The two branch divisions are not less the counter-

part of each other than are the two radical factors of reason and revelation whence they have proceeded. Nor are they less vitally connected in their practical issues. Detached from the revealed Jehovah, the rational sciences, as they theoretically involve atheism or pantheism, must tend to irreligion or idolatry; detached from the rational Absolute, the revealed sciences, as they theoretically involve dogmatism and bigotry, must tend to superstition and barbarism; but let the two be united and pursued together, and neither can fly into an extreme. We then have, in the ideal or ultimate reconciliation of rational with revealed science, the ideal or ultimate reconciliation of Christianity with civilization. Philosophy is married to religion, art to worship, and earth to heaven.

Thus what we have been taught respecting God in Scripture by our creed, we find proved in nature by our science. And whether we say, in philosophical phrase, that the Infinite Will (*causa causarum*) proceeds logically towards the Infinite Reason (*ratio rationum*) through those successive mechanical, chemical, organical, ethical, political, and religious forces in which it is rationally exerted through immensity and eternity; or whether we say, in theological phrase, that the "Spirit, infinite, eternal, and unchangeable in His being, wisdom, power, holiness, justice, goodness, and truth," hath decreed, "according to the council of His will, for His own glory, whatsoever comes to pass;" or whether we say, in Scripture phrase, that Jehovah is "the Alpha and the Omega, the First and the Last, the beginning and the end, which was, and which is, and which is to come, the Almighty;" in either case, we are but apprehending the same intelligible and adorable Reality.

Let heathen philosophy proclaim the Godhead unknown, and inscribe upon its fanes the fitting motto of such a deity:

> "I am all that was, and is, and shall be;
> Nor my veil, has it been withdrawn by mortal;"

but for the Christian philosopher to avow that "the last and highest consecration of all true religion must be an altar,—'To the unknown and unknowable God,'" is to forget that the times of such ignorance are now passed, that the veil of Isis has been rent, for all that will reverently gaze, and that only

by ever knowing the ever knowable God do we have life eternal.

We have thus reached, as our general conclusion, a modified affirmative to the whole series of questions propounded. As we passed from one to the other, we have striven for a firm foothold at each step by carefully avoiding the quagmire on either side. Considering the Absolute as an object of thought, we have admitted that our conception of it must be partial, while we have maintained that it may at least be consistent. Considering it as an object of faith, we have admitted that our belief in it is instinctive, while we have maintained that it involves no latent absurdity. Considering it as an object of knowledge, we have admitted that our cognition of it is imperfect, while we have maintained that it is nevertheless certain. Considering it as a reality to be revealed, we have admitted that a rational theology is posssible, while we have maintained that a revealed theology is its indispensable complement. Considering it as a reality to be demonstrated, we have admitted that the revealed theology is necessary, while we have maintained that a rational theology is its indispensable supplement. And by means of such distinctions we have escaped the corresponding extrêmes of atheism and pantheism, scepticism and mysticism, nescience and omniscience, naturalism and paganism, rationalism and dogmatism; at the same time that we have combined into one connected argument the several truths thus sifted from each discussion. Were such an arrangement and treatment of these difficult questions more generally observed, we cannot but think that much of the controversy now waged about them would disappear.

As a fit practical conclusion of the whole argument, we may now notice the absolute need of a divine, super-rational revelation for the guidance and completion of philosophy. Apart from the momentous moral uses of such a revelation, (of which we do not here speak), if we consider it merely in an intellectual light, we must claim it to be indispensable to the formation of a theory and system of perfect knowledge. The experiment of doing without it has been tried on the largest possible scale. We have found different thinkers, of

different schools, in different nations, contributing to a movement which has grown and spread for half a century, until now it involves the most vital interests of humanity. At its origin, like a mountain rivulet which a pebble might so divide that it shall afterwards flood opposite valleys, the question presented seems almost too simple and harmless for grave discussion: Shall the Absolute be held as a subjective idea or as an objective reality? Idealistic Germany has pursued the former; realistic England has pursued the latter; while versatile France has seemed to vibrate from the one to the other. And now what is the result before us? The two philosophical tendencies, thus starting in opposite directions, have reached their utmost limits only to disclose a vast intellectual void between them, which, if filled at all, must be filled by a divine revelation.

At the one extreme, we behold a Positivism which would simply extinguish philosophy in sheer nescience. It would not only contract the scope of philosophy, but make its very aim fatuitous. As begun by Hobbes, Hume and Comte, it quietly ignored all the metaphysical sciences. As pursued by Spencer, Lewes, and Fiske, it has combined the remaining empirical sciences in a sort of hypothetical cosmology, held together by a supposed law of universal evolution. And then, instead of supporting such a cosmic theory with that revealed theology which alone might give it any rational coherence, it builds it over a magazine of logical contradictions, into which philosophy can carry her torch only to explode all science in ultimate ignorance and all religion in conscious illusion.

At the other extreme, we behold an Absolutism which would merely evaporate philosophy in a fanciful omniscience. Besides expanding her sphere beyond the reach of finite mind, it would then vainly claim an immediate, infinite knowledge. As heralded by Fichte, Schelling, and Hegel, it sought to logically unfold all the sciences, both empirical and metaphysical, out of the potential notion of the Absolute. As completed by Feuerbach, Shopenhauer, and Hartmann, it has sublimated the whole intelligible universe, including nature, man and god, into a mere human conception or ideal repre-

sentation. And then in this imaginary world of its own creation, where it has thus superseded the Creator in His office and usurped the function of a revelation, it leaves to philosophy the task of resolving all science into a mere dazzling paradox, and all religion into a terrible mockery.

CHAPTER IV.

THE FINAL PHILOSOPHY OR THEORY OF PERFECTIBLE SCIENCE.

We have seen that neither the Positive Philosophy nor the Absolute Philosophy can furnish an exhaustive theory and system of knowledge, divine and human; the former, because it would ignore that whole metaphysical region which is largely occupied by revelation; and the latter, because it would supersede revelation throughout that region. And now it remains to inquire whether there be not some future and final philosophy, wherein reason shall appear concurrent with revelation, and human science be rendered harmonious with Divine Omniscience.

"Not to despair of philosophy," said Sir William Hamilton, "is a last infirmity of noble minds." And never did a noble mind succeed better in conquering it. No philosopher in modern times has striven so hard to set bounds to the cognitive instinct, or brought to the task such transcendent powers. Other thinkers may have had their moments of scepticism or misgiving as to the attainment of absolute truth, and some may even have abandoned the pursuit as hopeless; but what was in him, from the first, a constitutional tendency had become also a philosophical theory, and at length a religious creed. The discipline which he inculcated was that of a "prudent nescience;" his goal for the whole intellectual career would have been a "learned ignorance;" and over the very portal of revelation he wrote, as a flaming menace, the inscription, "To the unknown God." Even from philosophy her-

self he sought to wring stultifying "testimonies," displaying the chance confessions of her disciples, in learned array, as but so many fagots for her funeral pyre. If nothing is left her but to die, it must be confessed that in these charming disquisitions she can find what Coleridge terms her "euthanasy and apotheosis."

We do not forget the noble services of the great Edinburgh philosopher at the juncture when he appeared. No one now thinks of denying that the "Philosophy of the Conditioned," viewed as a check upon the "Philosophy of the Absolute," has had, and is still having, a most wholesome influence. It was the protest of robust, Scottish common sense against the vagaries of German transcendentalism, and the dazzling generalizations of French eclecticism. Appearing at a time when philosophy seemed in a fair way to degenerate into mere speculative cosmogony, it served to dissipate the brilliant world-bubbles with which grave thinkers were amusing themselves, and has already restored a more healthy and masculine tone to all modern thinking. The result is, that the philosopher no longer seeks, spider-like, to spin the whole phenomenal universe as a mere gossamer of abstractions out of his own subjectivity, mistaking the flimsy logic of man for the essential process of nature; but is content to explore cautiously the region of facts and principles, recognizing, at every step, the limitations, as well as the capacities of his own mental constitution. To have thus checked the speculative prosperity in the midst of a wide-spreading hallucination, and brought it back to the paths of reason and common sense, is a service which cannot be too gratefully felt, and will place the name of Hamilton among the brightest in the annals of philosophy.

Nor will we, in the least, undervalue the polemical uses of his logic against false philosophy, by insisting upon its entire want of positive fruit and constructive power, when it is remembered that he did not himself pretend to build up anything in place of the systems which he had destroyed, but rather strove to demonstrate that we have neither foundation nor material for absolute science or knowledge of things as they are, and that all efforts after such knowledge must, in the

nature of the case, be abortive. It is in fact not so much with the master as with his disciples that we join issue. We believe them to have made a use of his doctrine of nescience which, however naturally it may have followed, he did not foresee, and could not have approved. What was perhaps meant to serve as mere logical discipline and safe-guard, has been hastily applied by one party to questions of religion, and by another to questions of science, in a manner suited to bring them both into contempt. As a consequence, we behold at the feet of the same teacher a school of Christian apologists resolving the material of faith into sheer contradiction, and a school of sceptical scientists resolving the material of knowledge into mere ignorance. Scarcely has Mr. Mansel, from the extreme right brought forward his theory of a regulative revelation which shall accommodate the truth to our faculties, when Mr. Spencer, from the extreme left, rejoins with a homily on the "transcendent impiety which claims to penetrate the secrets of the Power manifested to us through all existence—nay, even to stand behind that Power, and note the conditions to its action." Thus the very cant of divines is becoming the creed of thinkers, at the same time that the speculations of thinkers are made the dogmas of divines; and we are ready to fancy ourselves looking at a sort of philosophical masquerade, in which orthodoxy itself strives to be wise above that which is written, while even infidelity affects to be meek and lowly.

There is of course somewhat of good as well as evil in these extraordinary interactions. They illustrate that beneficent law of progress, by which extremists are sometimes driven to exchange positions before they settle into a just agreement; and we cite them, not merely in proof that the mission of the Hamiltonian metaphysics is drawing to a close, but also as signs of a better day which we may hope it is heralding. Everything, indeed, in the present state of philosophy, betokens a crisis already passed, a reaction at hand, and a commencing return to the normal use of reason. The genius of modern research, after a long course of speculation, in which it has been hurried to the wildest extremes, by turns accepting and rejecting the most opposite premises,

now denying what it would be next to madness to doubt, anon admitting what it would be almost idiocy to believe, seems at length to have run the entire round of theories, and exhausted the utmost capacity of thought; and that very apathy which its excesses have engendered, amounting in some minds to a cynical unbelief, and tinging at times the most serious themes with satire, may prove to be but the wholesome disgust with which it is going back to the ways of simplicity and truth. One might almost liken its present posture to that of heathen philosophy at the dawn of Christianity, when, after having pursued from dire necessity, rather than perverse choice, the same fruitless career, it sat among decaying superstitions and errors, as in the melancholy twilight yearning for the day-spring.

We may accord to Hamilton the merit of this great reaction; but we surely cannot abide in the mere reaction itself as a finality. His theory of absolute ignorance, salutary as it has proved for a time, appears to us as little likely to exhaust the function of philosophy as to bring about a peace among philosophers themselves. While we may join him in repudiating the vain dogma of an immediate omniscience, we must still question if the only alternative be that of simple nescience. It would seem to be as irrational to assume that man can know nothing as to presume that he can know everything. The Conditionist, too, has proved himself to be quite as one-sided and reckless a thinker as the much-abused Absolutist. And now that the antagonists, as in the trite fable of the two knights, under the impulses of controversy have been forced to exchange views of the same twofold reality, it only remains that both should lose sight of their several errors in the recognition of their common truths.

Such a candid comparison of the two great phases of modern thought has, indeed, come to be the first duty of the philosopher. And it is fortunate that his task is at length so simple and obvious. A little reflection will show that but one course is now open to the speculative mind. It would be folly to reject either of its present tendencies, merely because of their extreme development, and it would be impossible to hold to both in their existing antagonism. Accepting each

as alike with the other legitimate and irrepressible, we must find for them, in their rebound, some middle region of belief or theory which they can hold in common, and some healthy interaction by means of which their dissolving contrasts shall vanish in the unity of truth, the harmony of knowledge, and the perfection of reason. In other words, the problem which is now to be met is that of a logical conciliation of the Absolute Philosophy and the Positive Philosophy, in some one final philosophy which shall be their sequel and complement.

And to this great problem the foremost thinkers of the age would seem to be already addressing themselves; more or less consciously it may be, but not without hopefulness. The very exigency out of which it arises has brought with it a spirit favorable to the inquiry. That failure of the speculative faculty, in any single direction to find for itself a complete theory of knowledge, while it may have driven some minds into scepticism, and others into mysticism, has but served in the more moderate class, to foster those philosophic virtues of caution, humility, patience, candor, and catholicity, which are most needed in a work of conciliation and reconstruction, and now only wait to be led into action. At least we very much mistake the tone of some later speculations if this is not a common and growing feeling; and it is in the hope of expressing it that we propose to state the question which we have represented as emerging, and to indicate, as far as may be, the probable course of philosophical opinion respecting it.

As illustrations of the present speculative crisis, we need only mention the rising German school of ideal-realists, such as Trendelenberg, Ulrici, Zeller, and Weis, who seek from various standpoints to correlate thoughts with things, the process of logic with the course of nature, physics with metaphysics, and empirical with rational science. Another class of thinkers, such as Flügel, Tobias, Stöckl, Steudel, Wekerle, is discussing the true function, scope, and problems of the philosophy of the future. Professor David Masson, in his "Recent British Philosophy," has also reached the conclusion that the chief philosophic question now is between empiricism and transcendentalism, agnosticism and gnosticism, nihilism and absolutism.

It is often said that there are, as there could be, and have been, but two distinct aims or tendencies of the philosophic mind. Old as the rival schools of Plato and Aristotle, we behold them reappearing with extraordinary vigor in modern Europe; the one mainly pursued by a line of German thinkers, extending from Kant to Hegel, and the other by a line of English thinkers, extending from Bacon to Hamilton; while, by the constructive genius of the French, they have been respectively systematized in the Absolutism of Cousin, and the Positivism of Comte. We assign such positions to the two last-named thinkers, because they are in fact the most consistent and consequent representatives of the schools to which they severally belong. Cousin was proud to acknowledge himself a pupil of Hegel, and, better than any other philosopher out of Germany, succeeded in mastering the doctrine of the Absolute, and bringing it to completeness; and although Comte was indeed a stranger to Hamilton in everything but his premises, and differed from him in all other respects as widely as one philosopher could differ from another, yet there is no other writer, either in or out of England, who has so vigorously carried out the doctrine of the conditioned in the domain of science, or so completely filled up the hiatus which it leaves in that of religion; neither Mr. Spencer, with his reverence for the Unknowable, nor Mr. Mansel, with his anthropomorphic revelation, being half so philosophical as the founder of the new "Religion of Humanity," who at least knew what he professed to worship, while they profess to worship they know not what.

We need hardly say that in thus classing together different thinkers as absolutists or positivists, we mean only to impute to them what they held in common, even though it may have been without concert, and to find for ourselves terms to indicate the two great parties into which the philosophical world has become divided in respect to the validity and extent of our knowledge, which is the great paramount problem to be considered. However much such writers as Fichte, Schelling, Hegel, Cousin, Ferrier, and Calderwood, may disagree upon minor questions, yet they are all easily recognized as advocates of that solution of the problem known as the Philoso-

phy of the Absolute; in the same manner that Hamilton, Mansel, Spencer, Lewes, Stuart Mill, and Comte, though but illy assorted in many respects, must be ranked together as defenders of an opposite solution of it, termed the Positive Philosophy or the Philosophy of the Conditioned.

It is to be regretted, indeed, that better terms cannot be found for expressing such important distinctions; but the wide currency which these have obtained, the recognized sense which is attached to them, and the difficulty, at the present stage of inquiry, of inventing others, more precise and yet as comprehensive, seem to leave us no alternative but to use them with such explanations as may serve to fix and guard their meaning.

The terms Idealism and Realism are also in general use, but they are hardly precise enough for the present purpose; while Empiricism and Transcendentalism, though sufficiently precise, are wanting in comprehensiveness, as both of them refer obviously to the mere process of knowledge rather than to its content or measure. But Positivism and Absolutism, besides being free from that somewhat opprobrious sense which the other terms have acquired as popular epithets, will respectively express the ideal and the real departments of knowledge, at the same time that they characterize the two great systems of knowledge with which we are familiar as the extreme results of the empirical and transcendental methods.

Let it then be premised that the words "Absolute" and "Positive" will here be employed only in their strictest etymological sense and most philosophical application, as correlate adjectives; the former meaning that which is absolved or loosed from any necessary relation; what it is as existing by itself, in its own interior essence, disconnected from our minds and neither conditioned nor modified by our cognitive faculties; and the latter meaning that which is posited or fixed in some contingent relation; what it appears as manifested to us, under its phenomenal character, in connection with our minds, and either conditioned or modified by our cognitive faculties. According to these definitions, it will be found that that which is positive must also be finite, embracing only manifested existence; while that which is absolute may also

be Infinite, embracing all real existence, and also, that both taken together, in a religious sense, will imply each other as the co-existing creation and Creator. The two ideas, however, will come out more clearly as we now proceed to define the two philosophies which are founded upon them.

The Positivist may in general be said to deal with things only as they positively appear; with facts and the laws of facts; or as it is more technically expressed, with the uniformities of succession and coëxistence among phenomena. These he takes to be the sole material of exact knowledge, and restricts the philosopher to the task of investigating and classifying them. The method he pursues is *a posteriori*, empirical, that of induction, or the ascent from particulars to generals, from facts to principles; the faculty on which he relies is the sensuous understanding; and the outward means which he employs are such as observation, comparison, and experiment. He is in his temperament practical, logical, and exact; a man of facts, who scoffs at ideas as but the mere chaff of things, and is not to be reasoned out of his senses.

The Absolutist may in general be said to deal with things as they absolutely are; with realities and causes; or with what are technically termed substances, essences, noumena, occult powers and principles. These he holds to be the only objects of real knowledge, and calls upon the philosopher to boldly seize them, and thence unfold the sum of truth. The method which he pursues is *a priori*, transcendental, that of deduction, or the descent from generals to particulars, from principles to facts; the faculty upon which he relies is the pure reason; and the inward processes to which he yields himself are those of insight, conjecture, and speculation. He is in his habit of mind contemplative, abstract and theoretical; a man of ideas, who eschews facts as but the mere husks of truth, and is not to be hoodwinked by his senses.

We are ready now to distinguish the two antagonistic philosophies, or philosophical tendencies, from each other.

As opposed to the Absolutist, the Positivist holds a doctrine of human nescience. Howsoever it may be with God or other beings, man, he maintains, is so limited by his cognitive faculties that he neither knows, nor can know, aught of things as

they absolutely are in themselves, but only as they appear to him, or are represented to him in the modifying process of his own intelligence. Conversant with these mere appearances or phenomena, he must utterly ignore their accompanying noumena or substances as realities which he may indeed believe, but can no more conceive than the blind can fancy colors or the deaf imagine sounds, and which in fact, for anything he knows, as they appear to the inhabitants of Saturn and Jupiter, would be to him as inconceivable as colors of sounds, or sounds of colors. And to this deficiency in the mode of our knowledge, he would add a necessary limitation as to its extent. Finite minds cannot hope to take in the boundless unknown, under all its manifold aspects. As related to man, the universe of which he forms a part, is like a polygon with but one of its infinitesimal sides adjusted to his capacity, and every attempt to embrace, even in thought, the Infinite and Absolute Reality can only recoil upon him in mere negation and contradiction. That philosopher, in fact, who dreams of actually transcending the finite understanding and soaring to some extra-human height of speculation, whence he may survey all existence in its essences, origins, and tendencies, is simply out of his senses. Is it not, therefore, the better part of wisdom and common sense to take the world as we find it, without seeking to vainly revise or comprehend it?

As opposed to the Positivist, the Absolutist holds a doctrine of human omniscience. Real knowledge, he insists, must be the same in man as in God and all cognitive beings, and so far from being restricted to mere phenomena, it may, and often does, involve an apprehension of things as in reality the very opposite of their appearance. We know, for example, in spite of the misrepresentations of our senses, that the earth moves around the sun, and though both sun and earth should appear to the inhabitants of Saturn or Jupiter to be moving around them, yet their science or actual knowledge of the facts could not possibly differ in kind from ours, or even from Omniscience itself. Nor is it necessary, in his view, to set any bounds to such knowledge. Finite as man may be, he is nevertheless the microcosm which reflects the whole macro-

cosm of the universe, as the dewdrop reflects the cope of heaven, and may embrace the Infinite and Absolute Reality in his very consciousness, or seize it in one swift intuition of his intellect, or unerringly recapitulate it in his logic. That philosopher, indeed, who forfeits these godlike powers of vision and apprehension, to burrow after his five senses among a few facts, has but fallen from his humanity, and lost his reason. Is it not therefore the nobler part of the creature to enter into the wisdom of the Creator, and find out that ideal of the creation which is becoming actual?

Let us next trace the two philosophies to their final results, in the more practical spheres where they issue.

On the one side, the extreme Positivist becomes at length a sceptic in religion as well as in science. Having ignored the Absolute, or resolved it into contradictions, he cannot long retain as credible that which he has proved to be both incognizable and inconceivable; he cannot believe in that which he can neither think nor know. He is therefore left without God in the world. And the universe remains to him but as a museum of dry facts; life is but a struggle against death; and nature is but the splendid tomb of man. Or if he recoil from this gulf of atheism, it is only to frame for himself, out of the remaining social phenomena with which he has to deal, a kind of scientific religion, with Humanity for his God, savants for his priests, industry for his worship, fame for his immortality, and a civilized earth as his heaven.

On the other side, the extreme absolutist becomes at length a mystic in science as well as in religion. Having transcended all positive phenomena, or absorbed them in the process of reason, he claims that to be fully comprehensible which he has proved to be conceivable; he believes he can know whatsoever he can think. Both the world therefore and God are lost in himself; and the universe becomes to him but as a passing vision of phænomena; time but as a mere shadow of eternity; and man but as a gilded bubble on the stream of nature. And not dizzied at this height of pantheism, he even dreams of a kind of intuitive omniscience, by which both experience and revelation are to be superseded, facts resolved into ideas, creation reduced to logic,

and the whole dissolving universe reviewed from its genesis to its apocalypse.

The eye may now assist the mind, if we view the opposite terms of the two philosophies in parallel columns. They will exhibit their contrasts under several heads:

(1.) AS TO THE MATERIAL OF KNOWLEDGE.

Appearances	*versus*	Realities.
Phænomena	"	Noumena.
Qualities	"	Essences.
Accidents	"	Substances.
The Contingent	"	The Necessary.
The Particular	"	The Universal.
The Finite	"	The Infinite.
The Conditioned	"	The Unconditioned.

(2.) AS TO THE PROCESS OF KNOWLEDGE.

The Understanding	*versus*	The Reason.
Sensation	"	Reflection.
Observation	"	Intuition.
Experiment	"	Conjecture.
Induction	"	Deduction.
Analysis	"	Synthesis.
Common Sense	"	Genius.
Discovery	"	Revelation.

(3.) AS TO THE SYSTEM OF KNOWLEDGE.

Realism	*versus*	Idealism.
Scepticism	"	Mysticism.
Empiricism	"	Transcendentalism.
Materialism	"	Spiritualism.
Atheism	"	Pantheism.
Agnosticism	"	Gnosticism.

Other terms, of like import, might be added to each class, but these will suffice as familiar specimens. To sum up the results of the whole comparison in a few words: The absolutist, trusting solely to his reason, would penetrate behind or beyond phænomena in search of their essence or cause, and endeavor by mere logical process from assumed principles to revise and reconstruct the existing universe; while the positivist, trusting solely to his senses, would abandon realities for their appearances or phænomena, and endeavor by mere empirical process from admitted facts to investigate and modify the existing universe. And while the former would erect the sciences into a system of philosophic omnis-

cience, and so abruptly consummate the task of philosophy; the other would as abruptly leave it incomplete, by erecting them into a system of philosophic nescience. Thus the pyramid might serve as a symbol of the one and the obelisk of the other. And if (adopting Sir W. Hamilton's quotations) to the one we might apply the maxim of Abelard, "Intellige, ut credas" (Know, that you may believe), to the other might be applied that of Anselm, "Crede, ut intelligas" (Believe, that you may know).

Such are the two philosophies to be reconciled. And we ask, if to merely state them with any fairness is not to find them already somewhat accordant? Why should we be in haste to reject one more than the other, or to maintain one against the other? Who would be so bold as to ignore either category of cognizable material; phænomena or noumena? or so rash as to obliterate either class of cognitive faculties; the empirical or the rational? or so vain as to dream of swallowing up the cognitive capacity, either in infinite knowledge or absolute ignorance? Which of the two philosophies alone, without the other, could develop our whole power of knowing, or exhaust the entire sum of the knowable? May they not both be essential to the completion of philosophy? And must we not begin to look for the grounds and means of their conciliation?

Our first argument for this view is, that both philosophies are deeply rooted in the human mind and have grown and spread for centuries in history, until now they have become interwoven with the most precious interests of civilization.

There is no sound mental constitution in which the germs of both are not to be found, or from which they can be wholly extirpated. In every community of scholars, in every circle of thinkers, their respective representatives will appear. Every man may be said to be characterized by one or the other. Some are such intense positivists, they will confine themselves to the few facts within reach of their senses, pronouncing all beyond these a region of pure faith or mere conjecture; some are such thorough absolutists, they will almost question facts themselves until they have gone behind them in search of their causes and reasons; still others

would seem to be absolutists as to one set of facts and positivists as to another, or absolutists and positivists by turns as to the same facts, according to their prejudices or circumstances. The sceptic in religion will be a mystic in science and become the dupe of any vulgar imposture; or the mystic in religion will be a sceptic in science and dogmatize against mathematical certainty itself; or the most exact scientist, alike with the most devout religionist, will be found culling texts or facts to suit some wild hypothesis. But he who is wholly without one or the other of these philosophical elements, or possessing one denies or suppresses the other, can only serve as an example of an undeveloped or abnormal intellect.

And what is thus patent in the very constitution of the human intellect has been conspicuous throughout history. Everywhere, and in all ages, these two original tendencies have appeared, acting and reacting upon each other, and by turns predominating in the whole existing civilization. If we go back to the primitive world, we shall behold them upon a grand scale, diverging eastward and westward on opposite sides of the globe, until they have reached their extreme development as literal antipodes of thought, in that Asiatic absolutism which would lose the finite in the infinite as but a dream of Brahm; and that European positivism which would lose the infinite in the finite under a portion of consecrated bread. Or, if we view them upon a smaller scale, as developed in that part of the world with which we are most familiar, we have but to think of such representative names as Plato and Aristotle in Greek philosophy, Anselm and Abelard in scholastic philosophy, Bacon and Descartes in modern philosophy, and Hegel and Comte in existing philosophy, in order to see that he must simply strike out one page of history, who would ignore either of the two tendencies.

It is true that attempts have been made to write the history of philosophy, in the interest of one to the exclusion of the other, or at least to press the evidence of one in a partisan spirit, against that of the other. The "Philosophical Testimonies," adduced by Hamilton, bear marks of that erudition for

which he was so distinguished, and yet, regarded as a strict historic induction, they are open to at least three serious objections: 1st. They consist mainly of a mere crude aggregate of names, authorities, maxims, extracts, culled with a foregone purpose, and without anything in the nature of an exhaustive survey of all the intellectual phænomena of the periods to which they severally belong. 2d. Many of them, especially those pertaining to the scholastic age, are simply religious confessions of the weakness and depravity of the carnal understanding, rather than philosophical definitions of the normal limits and capacities of the intellect. 3d. Such of them as are strictly philosophical can easily be balanced if not outweighed, by numerous and powerful testimonies to the opposite doctrine. Place in the scale with this treatise the equally learned and sagacious work of Cousin on the History of Philosophy, and it will be seen, that History refuses to commit herself to one tendency more than the other, but claims both as alike ineradicable and universal.

And as a consequence of their deep roots and long growth in the past life of the race, they have sent forth and interwoven their branches through all modern society. In their wake have followed portentous systems of science, politics, and religion, which as simple monuments of speculative energy are suited to fill the mind with wonder, while in their practical bearings upon the most vital interests, they are already formidable for good as well as for evil.

This is certainly true of the supreme interest of religion. It were idle to maintain, that either of the two philosophical tendencies is essentially depraved or depraving, when we behold them flowing along together, where the stream of history is most open and pure, in the very channels of the Church, and under the full blaze of the Christian revelation. From the first chapter of the Gospel of St. John to the last chapter of the most recent theological treatise, Christianity has in fact been striving after a philosophical statement and vindication of her peculiar facts and truths, through the formulas of one or the other of these two rival schools of speculation. The inevitable task of adjusting the human intellect to the divine intellect, and accounting to reason for

the content of revelation, has involved the one as much as the other. And we have only to survey the present state of religious parties with regard to them to see how impossible it would be to draw the lines between them, so as to drive either beyond the pale of orthodoxy. If the Hegelian absolutism, at one extreme, became evaporated into a mere Christian mythology, yet at the other extreme, it aspired after nothing less than a true Christian theology; and although the Hamiltonian positivism, as we have seen, has been driven on the one side toward the abyss of a scientific atheism, yet on the other, it has been hailed as a new bulwark of the most orthodox faith. Extravagant as such opposite results may appear, yet there is too much truth as well as error involved in these systems, for the Christian divine to think of either despising or disparaging them, and he who idly strikes a blow at them has need to beware lest he be found aiming at the vitals of Christianity itself.

And the same is not less true of the great interest of science. If we are tempted to regard the two philosophical tendencies as mere speculative efforts, recurring from age to age without aim or issue, we have only to trace their historical connection with the various bodies of real knowledge, which they have respectively nourished, and which they still involve, after centuries of growth, in a state of intellectual schism and anarchy. And it is only when either has been exclusively followed that it has run into flagrant error. If the positivism represented by Bacon has been driven by Comte to the extreme of the baldest materialism in the domain of metaphysics, yet has not the absolutism, initiated by Descartes, been carried by Schelling to the sheerest mysticism in the domain of physics? Leaving out of view such mere vagaries of the two procedures, and surveying only their positive contents or results, the empirical or physical sciences issuing from the one, and the rational or metaphysical sciences issuing from the other, it will be seen that to ignore either of them would be to paralyze an entire half of the body of knowledge, as well as to imperil some of the most catholic and lasting interests of humanity itself.

But we are now ready for our next argument, which is, that

the two philosophies, if logically adjusted and combined, would so check and complete each other, as to yield the one final philosophy of the future. And this, whatever view we take of the mission of philosophy, whether it concern the method, or the theory, or the system of perfect knowledge.

Is it primarily her mission to prescribe a method of perfect knowledge, to train the cognitive faculty to precise action, and equip the social intellect with all possible means and modes of research? Then it is not in either of the antagonistic methods, now separately pursued, that such symmetrical discipline can be found. Both are alike needed as mutual correctives and, so long as followed apart, must become erroneous and pernicious. As a sound absolutism will be the only cure for the materialism, scepticism, and atheism of the extreme positivist, so a sound positivism will be the only cure for the idealism, mysticism, and pantheism of the extreme absolutist. Let the deductive process of the one be pressed in ignorance of the laws of facts, and our science cannot but be vague and visionary; let the inductive process of the other be pressed in ignorance of the causes of facts, and our science cannot but be partial and schismatic; but let both processes be conjoined as complementary factors of knowledge; the deductive with the inductive, the rational with the empirical, intuition with experience, conjecture with observation, revelation with discovery, and then we may hope for that *Ultimatum Organum*, or last unerring logic, by which philosophy is to mount toward perfect knowledge.

But is it furthermore her mission to provide a theory of such perfect knowledge, to discern the grounds, limits, and goal of real science, and frame for its wrangling votaries a doctrine which shall ensure their spontaneous concurrence and coöperation? Then it is not in either of the rival schools, now contending for the mastery, that the elements of that one catholic creed of reason must be sought. Only by rejecting their incidental errors and combining their residual truths, can we secure rational agreement. If we concede to the positivist that our knowledge is both finite and of the finite, and that faith is complemental to it, in practically apprehending the infinite, we may still maintain, with the absolutist,

that the sphere of our knowledge is ever encroaching upon the sphere of our faith, and that therefore the two are ideally or ultimately coincident; in other words, that positive science is indefinitely extensible towards absolute science. Or if we concede to the absolutist that our knowledge is hypothetically infinite, and may even be imagined as at length swallowing up faith in intuition, or surmounting it with logic, we might still maintain with the positivist, that the goal of our knowledge is but an ideal of our faith, and as such, though ever to be approached, is never to be attained; in other words, that absolute science is only perfectible through positive science. And when we have thus embraced in one view both provinces of cognition, the phænomenal together with the noumenal, the laws of facts together with their causes, the finite together with the infinite, the discoverable together with the revealable, we shall have that *Omne Scibile*, or exhaustive theory of the knowable, by which philosophy can survey the very infinitude of reality as her domain and anticipate a progressive science thereof as her career.

And will it finally be her mission to organize a system of such perfect knowledge, to exhibit the ever growing sciences in their logical relations, according to their normal order, and deduce the axioms which determine their evolution and perfection? Then in vain shall we look exclusively to either of the two extreme systems, now dividing the empire of knowledge into hostile factions. Not only are both alike incomplete, but we cannot even suppose the one complete without the other, or triumphing at the expense of the other. Take by itself the absolutism of Hegel, the most logical ideal of the universe ever conceived by man, and what is it, with all its brilliant categories of thought, but a mere airy speculation, the toy-world of a creature vainly mimicking the Creator? Or take by itself the positivism of Comte, the most rigorous construction of phænomena ever devised by man, and what is it with all its imposing masses of fact, but a mere baseless generalization, no better than the myth of the world-upholding elephant standing upon nothing? But imagine now a system in which both of these systems shall have been thoroughly sifted and blended; fancy a positivism empirically

correcting and perfecting the ideas of the absolutist, and an absolutism rationally explaining and harmonizing the phenomena of the positivist, the former ever ascending inductively from facts towards the same principles from which the latter is ever deductively descending towards the same facts; and then think of the physical sciences issuing from the one, as complemented by the metaphysical sciences issuing from the other, and of both as proceeding together, in their respective provinces of research, under ascertained laws, with ceaseless accessions, throughout the universe of reality, towards the very fulness of absolute truth,—and we shall have that *Scientia Scientiarum*, or vision of ever-expanding knowledge, in which philosophy may find her noblest function discharged, and her highest mission accomplished.

It appears, therefore, that the two philosophies are true in what they affirm, and false only in what they deny, or that they become erroneous simply by being pursued against or without each other; and that in proportion as they could be combined in theory and practice, they would but exhibit to us complemental aspects of the same reality, related truths of the same facts, and together tend towards perfect knowledge itself, like geometrical lines which we know must ever approach, even if they never meet.

Our last argument is, that this reconciliation, besides being thus desirable and conceivable, would seem at length to be already imminent and practicable. It could not have been effected hitherto, and may be effected now.

If it be asked why it could not have been effected hitherto, or why, with both tendencies in action for ages, there should have been such a recurrence of the same speculative errors, we reply, that this may have been necessary in order to expose conclusively their separate weakness and absolute need of each other; or, howsoever that may be, that it is at least a fact, that never before have they been driven to those wild extremes, those last conceivable limits, into which they have at length diverged; nor consequently have they ever before developed so favorable an exigency for precipitating their own mutual recoil and coalition. As it was reserved for Hegel to carry an exclusive absolutism to the very climax of absur-

dity, by confounding thoughts with things, identifying creation with logic, and converting deity into humanity, so it only remained for Comte to drive an exclusive positivism to a like pitch of folly, by ignoring realities for phenomena, evaporating causes into fictions, and substituting humanity in place of deity. Any farther in either direction, it is not possible for errant philosophy to go; and the only alternatives left to her are, either to relapse into her old antagonisms, or start forward under their resultant impulse, in a new career of ever-unfolding knowledge.

And that the great reconciliation is already practicable, actually within the capacity of the human intellect, cannot be doubted by any one who will thoughtfully survey the philosophical world at the present moment. Not only is that theory of perfect knowledge, here indeed but too feebly indicated, an ideal toward which many minds from different points are groping with more or less intelligent aspiration; not only is it such an ideal as can alone satisfy the cognitive instinct, else to be forever baffled or bewildered; and not only is its fulfillment logically required by the whole previous development and present exigency of reason, but the very means and materials, as well as motives, for its fulfillment are at hand, in that mass of accumulating sciences and arts, which now offers itself for logical organization, in that spirit of catholic research which is spreading through all the sects of school, church, and state, and in that unprecedented interchange of thought, which is rallying advanced thinkers from different lands and of diverse creeds, to the final problems of philosophy.

It is true that such an intellectual palingenesia, whensoever and howsoever effected, could not burst upon the world, as in an ordinary crisis, with any of the suddenness or amazement which mark a great religious reformation or political revolution. Rather must it proceed in secresy and silence, remote from general observation and without popular applause, like those grand hidden forces of nature, the very thought of which awes the lonely student into worship, while the common mind, engrossed with mere appearance, scarcely suspects their existence, or only derides them as wordy abstractions, until it finds itself in presence of their surprising results.

It is true, too, that no single mind, or people, or even generation, occupied with this great work of organizing science and art, can hope alone to accomplish it, or claim the whole glory of the achievement. In an age when

"The individual withers, and the world is more and more,"

we must expect great themes to multiply great thinkers, and not imagine that, even in the region of reflection, we can escape that division of labor which, in the lower plane of discovery and invention, retains the most distant strangers as coworkers, and often brings them from their simultaneous researches, as rival claimants to the feet of science.

And it is true, still further, that this final philosophy, as now projected in any minds, can be scarcely more than a vague ideal, while to some minds it may appear to be as visionary as it is vague, until it shall have been actually reduced to a system, expressed in definite propositions, and applied to the practical interests of life. In this it is but like every other ideal, whether of philanthropy or of religion. And yet, even prior to a full realization of it, and in advance of any tentative efforts towards it, there is enough of certainty and grandeur in it to enkindle all minds with hope and exultation.

We can at least forecast its prevailing spirit. We know that it will be at an equal remove from the extreme methods hitherto pursued. It will be, what the very word philosophy itself expresses, the wooing of wisdom as distinguished alike from the conceit which arrogates it, and the folly which despises it. It will aim at conscious knowledge in contrast both with "learned ignorance" and with "intellectual intuition;" and it will proclaim the doctrine of a progressive science, in opposition at once to a "prudent nescience," and to a fanciful omniscience. It will neither affect to know nothing, nor assume to know everything; but only seek ever to know more and more. It will be the philosophy of undying hope, as separated not less from presumption than from despair, and of rational faith as superior alike to credulity and to unbelief. It may take for its watchword not merely, "Crede, ut intelligas," nor solely, "Intellige ut credas," but simply both maxims in one, "Fides quærens Intellectum:

Intellectus quærens Fidem" (Faith seeking Knowledge: Knowledge seeking Faith). And it might find its symbol not in the Egyptian obelisk towering with hieroglyphic secrets towards the Infinite, nor yet in the Greek pediment, cowering with its sculptured gods in the Finite; but rather in that resultant expression of both Finite and Infinite, blending and rising together in the Christian spire.

We may even begin to project in outline its issuing system. We can discern signs of commencing organization, thoughout the whole existing mass of knowledge, divine and human. Already many of the chief authorities in each science may be cited as the witnesses and harbingers of its essential and prospective harmony with religion; already its clearly ascertained facts are in proved agreement with its plainly revealed truths; already its opposing hypotheses may be provisionally adjusted to its conflicting dogmas; and already its growing marvels seem to rival its former miracles. The sciences, one after another, are returning from their researches, as if to do religious homage, and receive religious sanction.

Astronomy has come with such illustrious witnesses as Copernicus, who craved in his epitaph no other grace than that vouchsafed the penitent thief on the cross; Kepler, whose rapturous Eureka was a declaration that he could wait a century for readers, since the Almighty had waited thousands of years for a discoverer; Newton, who literally studied the law of the Lord in both His Word and works, and kindled the very mathematics of the Principia into praise; and the Herschels, father and son, whose tomb still proclaims how one generation shall show the works of Jehovah to another. Devout astronomers for centuries have been building celestial physics upon natural theology as their only rational basis, and illustrating with growing proof the immensity, eternity, omnipotence, omnipresence and immutability of Him who hath established His faithfulness in the heavens, and garnished them by His Spirit. If some of them, with pious intent, have renounced the theory of the nebular origin and destiny of suns and planets, yet others, like Mädler, Whewell and Mitchell, with equal faith, have accepted it as but the

method of that Divine wisdom which prepared the heavens of old, and shall yet cause them to vanish like smoke, and be no more. No miraculous pause of the sun in his course could be more wonderful than the stupendous motions of the solar system itself. No single new star in the East can seem more incredible than the countless galaxies which have since been discovered. The spectral light of other worlds is beginning to fall, like a new revelation, upon the whole question of the heavenly state and destiny, and their etherial vibrations may yet thrill with magnetic thought and sympathy in those predicted new heavens, wherein dwelleth righteousness.

Geology has brought such great names as Robert Boyle, a founder of the Royal Society and of the first apologetic lectureship, who never mentioned the name of God without a reverent pause; John Ray, the first to unite natural history with natural theology; Cuvier, who fancied himself bidden, like the prophet, to evoke the dry bones of buried nature into life; and Ritter, who avowedly wrote his magnificent work as his song of praise to God. Hosts of believing physicists have sought rational foundation and cement for the whole terrestrial system in the power, wisdom and goodness of the Creator as displayed by His manifold works in all the earth. While a few of them may still doubt the accordance of the new geology with Genesis, the many, with Hugh Miller, Dana, and Guyot, are seeking to identify the long cosmogonic eras with the six days wherein God made heaven and earth and all that in them is. The former deluge and the coming conflagration may be more dramatic but are not more real marvels than the glacial and igneous epochs for which many geologists would plead. Ships now carry to our antipodes that Divine Word which was once held to deny their existence, or consign them to the nether world of the lost. While all physical geography attests the curse upon the ground for man's sake, all political geography is steadily revealing the predicted new earth when the desert shall blossom as the rose.

Anthropology has been yielding such high authorities as Linnæus, who declared that he stood mute with amazement at the inconceivable Divine wisdom displayed through all living nature; Roget, Prout, and Bell, who devoted their

great names and attainments to the high argument for a God; Prichard and Agassiz, who ever included the Scriptures among the sources of scientific information; and the numerous missionary ethnologists, linguists, and antiquarians who have become authorities in science as well as martyrs to their faith. Though as yet the mass of devout physiologists may repudiate the very notion of a secular evolution of human from animal species, yet there are some already querying, with Mivart, Henslow, and Peabody, if it be not the true scientific explanation of the manner in which God formed man out of the dust of the earth ere He breathed into him a living soul. Whether the human family be of one race or many races, the first Adam and the second Adam would still be their chief moral representatives. The confusion of tongues at Babel and their miraculous fusion at Pentecost cannot present greater difficulties than the complicated problem of the origin and destiny of languages. The new Christian humanity already begins to put all things under its feet. Vaccination and chloroform are mitigating the curse of disease and pain; the industrial arts are beating the sword into the ploughshare; and as man subdues the wild earth, the lion may yet lie down with the lamb in a paradise regained.

Psychology has been founded by such religious thinkers as Descartes, who claimed the title of defender of the faith; Hartley, who wrote a tract on the truth of the Christian religion; Kant, who adored God in the moral law within, not less than in the starry heavens above; Hamilton, whose motto was that on earth there is nothing great but man and in man, nothing great but mind; and the long line of speculative divines who have become eminent in logic, ethics and æsthetics as well as in all pure living and sound doctrine. Not only have they been gathering fresh evidence of the moral attributes of God from the phenomena of reason and conscience; but they have also begun to base the peculiar doctrines of grace upon ascertained mental laws in the mind of the flesh as well as of the spirit. If most of them utterly repudiate the new hypothesis of a gradual evolution of force into will, sense into thought, and matter into mind, yet there are signs that a few are getting ready to reconcile it with the doctrine of the

growth of the new creature in the grace and knowledge of Christ. Whether man be a necessary or a free agent, he is held both by Scripture and by Nature to be responsible for his acts. The miraculous gifts, revelations and conversions of the apostolic age are not half so incredible as the analogous claims and beliefs of millions at the present day. Some scientific persons are such believers in the future life of the soul that they profess to have gained the most strangely minute information concerning it. No predicted marvels of the resurrection can now seem to us greater than the extant wonders of the heliotype, the telegraph and the spectroscope. As the psychic powers of man are unfolded, he is strangely coming into ethereal relations with things unseen and eternal, and may begin to imagine how the glorified spirit might be more gloriously transfigured and appareled than the Raphaels and Gabriels of devout fancy.

Sociology may be said to have been heralded by such devout civilians as Grotius, the author of the first modern treatise on the Christian evidences, and Vico who cherished an unwavering religious faith in the midst of calumny, disease and death; as well as by such intelligent divines as Bossuet, the Eagle of Meaux, who surveyed as from a lofty peak the whole panorama of universal history, and Jonathan Edwards, who, at a still diviner height, beheld the vast scheme of human redemption from its rise in the kindling morn of creation to its setting in the gorgeous pageant of the judgment. While most sacred historians have hitherto rejected the idea of a spontaneous development of society, with ever growing arts, sciences and polities, yet a few, in a more scientific spirit, have sought to conceive of the whole divine economy as proceeding from small beginnings, like the branching tree from a mustard seed, or the mighty forest from a handful of corn. Whatever abstract views may be held as to the compatibility of great social laws with Divine sovereignty and human freedom, it is certain that the two agencies do actually concur, as a smaller within a larger sphere, in the whole process of history. The signs and wonders which marked the origin and early progress of the Church may not be more miraculous, in the view of all heavenly principalities and powers, than the moral triumphs with

which it is still wrestling against the rulers of the darkness of this world; and as it ever marches onward, appropriating and transforming the whole accompanying civilization, blending culture with faith, and resolving art into worship, it may yet burst upon the world with such a universal social regeneration as shall more than realize the utopia of the philanthropist in the millennium of the prophet.

Theology has been espoused and defended by such scientific theists as Nieuwentyt, the Religious Philosopher, who dropt that illustrative watch upon which Paley stumbled eighty years afterwards; Leibnitz, whose Theodicea was designed to harmonize reason and faith; Samuel Clarke, Berkeley, and Butler, who laid a basis for the Evidences of the Christian religion in the metaphysical, physical and psychical sciences; to say nothing of the more professional divines of every age and school who have striven to incorporate the whole existing rational theology with the revealed, in one compact body of truth. Many of them may not even have imagined a natural history of religion, such as the scientific theologians are advocating, yet Bishop Butler long ago suggested that the entire historic development of the Christian scheme of redemption may be as natural as the visible known course of things. The divine insignia by which it has ever distinguished itself from the other religions of the world, may be only enhanced as it steadily proceeds to reject their errors and absorb their truths, until at last it shall stand forth as the one absolute and universal religion, the faithful and accepted gospel of the Saviour of mankind.

Philosophy herself, from the earliest time, has been gathering in her train, as forerunners of her own sacred ideal, such fathers of Christian science as Justin, who was styled the Philosopher and the Martyr; Clement of Alexandria, who first solved in Christianity the problems of Plato; and St. Augustine, who first defended it with the logic of Aristotle: such scholars of Christian science as John Scotus Erigena, who declared that true philosophy and true religion are one; Albertus Magnus, so called because he was great in physics, greater in metaphysics, greatest in theology; and Roger Bacon, the saint and the martyr as well as the physicist:

such reformers of Christian science as Francis Bacon, who freed natural philosophy from scholastic bondage; Bishop Butler who brought religion into analogy with the course of nature; and after these great leaders their countless followers who ever since have been striving to bridge over or close up the yawning chasm between science and faith. If some excellent divines have at times denounced all philosophy as vain and deceitful, like that which prevailed at Corinth, yet others with St. Paul and Calvin have been able to distinguish between the philosophy that is sound and truthful and one that is after the rudiments of this world and not after Christ. And though many have begun to despair of such a true Christian philosophy as but a fanciful ideal of the fathers and the schoolmen, yet a few can only see in each successive failure a nearer approach to success, and still yearn with growing faith and hope after the riches of the full assurance of knowledge. No beatific vision or millennial apocalypse of truth can seem too mystical or miraculous to follow the brilliant intellects and growing sciences that for ages have been anticipating and heralding it. Already the divine wisdom revealed in Scripture has been found congruous with that discovered in Nature, and the marvellous knowledge hitherto attending their separate growth and increase only helps us to imagine with what enhanced splendor they shall pour their blended rays upon the world.

Nor could there be conceived a problem more sublime and momentous than that which thus still remains to be solved. To ascertain the respective spheres, prerogatives, and methods of human reason and divine revelation; to adjust their reciprocal relations on principles binding upon the adherents of both; to apply such principles throughout the sciences to all pending controversies, with the view of sifting error from truth; to gather by this means evidence of a growing harmony between the two great bodies of knowledge, as they accumulate and advance, supporting, interpenetrating, and illustrating each other; in a word, to gradually heal that immense schism which for centuries has been stealthily invading the most cherished opinions and interests of mankind, and thenceforward to link the divine and the human reason, in their

joint process through coming ages, against all earthly error and sin,—these are objects which have only to be stated in order to be felt in all their moral value and grandeur. They are not the transient concerns of any calling, sect, or party, but the lasting and catholic interests of humanity. And though no single mind or generation may achieve them, yet the bare conception and attempt would themselves be their own sufficient reward. To be simply living at a time when such an ideal is but beginning to dawn among men, must seem to one who rises to its full comprehension, the richest boon that has yet been conferred upon them, and, in the first joy of its discovery, he might almost tremble lest it be too good and glorious ever to become real, or through some fault or want in nature, should fall short of fulfillment, could he not find, on surveying the scale and resources of creation, that the order of the world is not less fixed than is its progress sure.

Viewed in one light, such questions are indeed suited to daunt the most reckless speculation. What mortal wisdom can reap two such vast fields of knowledge, or bind into sheaves such varied harvests of truth! How jealous is reason of faith, and faith of reason! And how warily must either venture within the bounds of the other! To link the jarring sciences, material and moral, rational and revealed, into one series, by one method, and to one aim; to organize a true hierarchy in this present anarchy of knowledge, divine and human,—this is no mere wordy pastime of philosophers, but an arduous task from which all earnest souls would but shrink in proportion as they comprehend it.

Viewed in another light, however, such questions only nerve while they tempt our curiosity. What a mass of human interests hangs upon their issue! What a medley of human opinions is involved in their solution! How all human duty and destiny concentrate in the problem of reconciling the finite with the Infinite reason! and how all human history points to the goal where science returns into Omniscience, the earth becomes subject to man, and man to God! The unity of nature and Scripture, the marriage of reason and faith, the perfection of knowledge, the triumph of art, the regeneration,

of society,—these, in their order, are linked ideals of prophecy and philosophy, which at once overawe and charm us into an enthusiasm that must grow in fervor as it grows in humility and caution.

"And here," said the greatest of philosophers, after a like argument, "I cannot but reflect how appositely that answer of Themistocles may be applied to myself which he made to the deputy of a small village haranguing upon great things, 'Friend, thy words require a city.' For so it may be said of my views that they require an age, perhaps a whole age, to prove, and numerous ages to execute. But as the greatest things are owing to their beginnings, it will be enough for me to have sown for posterity, and the honor of the Immortal Being, whom I humbly entreat, through His Son, our Saviour, favorably to accept these, and the like sacrifices of the human understanding, seasoned with religion, and offered up to His glory!"

CHAPTER V.

PHILOSOPHIA ULTIMA: PROJECT OF THE PERFECTED SCIENCES AND ARTS.

WHOEVER will survey the present state of human knowledge, will at first be amazed at its vast extent, its rapid increase, and the grandeur of the monuments with which it is filling the world. On every side he will behold the fables of mythology turned into facts, and the marvels of prophecy passing into history before his eyes. He may even fancy all that he now witnesses in science and art to be but like the mighty preparations for a future building whereof only the foundations have been laid, while the superstructure as yet is scarcely conceived. But no sooner shall he turn from his ideal temple of knowledge in search of actual workers to fashion and frame it together, than he will be shocked to find them wrangling in bitter feuds over their task, or toiling apart without plan and concert, or rallying confusedly to the work, or scattering from it in chagrin and despair, until they seem to him like the infatuated builders on the plains of Shinar, confounded by the anger of Heaven in the midst of some impious labor. And he will be ready to fancy that the genius of human philosophy is but doomed to sit down and weep amid the magnificent ruins of a work which she had begun but could not finish.

Then let him turn from the present and take counsel with the past. History will lie spread out beneath him like a vast quarry wrought by successive generations, and already strewn

with fragmentary truths, which are as the chiseled stones of a structure hitherto without model even in the fancy of the builders, as they wrought apart each at his own task; but now, at last, the plan of the Divine Architect is to be displayed, the master-workmen in each science marshalled, and the perfect temple of knowledge reared, to the glory of God and for the good of mankind.

This mature effort and final task of the human mind may be anticipated under the name of the Ultimate Philosophy, or that last summative science which is to be the fruit and goal and crown of all the sciences, as well as the means of their highest use and grandeur. Before the cognitive instinct can be satisfied, and the mass of knowledge rendered exact, coherent, and operative, the sciences themselves must be made the subject of science; must become the material, as well as instrument, of research, and their product, like other phænomena, be brought within the sphere of rational prevision and control. If we could imagine them perfected singly and apart, there would still remain the work of bringing them into logical connection, organizing them as a compact system, and concentrating them intelligently upon the social well-being; but this work really enters into their growth as well as fruition, and is so essential, they may as little thrive without it as branches severed from a common tree. To discover these vital relations among them, to arrange them in their normal order, to distinguish their kinds, measure their resources, ascertain the laws of their evolution and interaction, and at length frame a theory by means of which their whole historic procedure may not only be reviewed and foreseen, but itself corrected, guided, and matured,—this is the ideal of the ultimate philosophy. Itself the latest offspring of science, equipped with all means and modes of knowledge, it aims to traverse the entire domain of intelligence, everywhere sifting the known from the unknown, and gathering the fragments of truth into an intelligible and consistent whole. It is, in a word, that science of science which science itself shall yield, and wherefrom are to be shed upon the world the full flower and fruitage of reason.

The conception, the necessity, the utility, the rise and

growth, and the method of this ultimate philosophy are topics which admit of enlarged treatment hereafter. Three great works are included in its project as the tasks of the present and coming generations: 1st. Its construction out of the sciences; 2d. Its application to the sciences; 3d. Its consummation of the sciences. We here simply propound them as themes, condensing into sentences what might be expanded into volumes.

The work of constructing the ultimate philosophy must begin with an *Expurgation of the Sciences*. By this is meant the sifting from them of those prejudices, physical, metaphysical, and theological, (the *idola* of Bacon), which are the offspring of their own rank growth and schismatic culture, and which now hinder direct access to the whole body of knowledge as it lies scattered among the different professions and in various departments of learning. When the eye of reason is thus purged of all films of conceit and passion, and the prospect cleared of every mist and cloud of error, it will be ready to embrace in one view the whole field of truth, of whatever sort and wherever found.

The next step will therefore be this *Survey of the Sciences*, or particular examination of their several provinces and products. This will include the history and description of each species, and a consequent classification or arrangement of them, which shall be accurate, complete, and consistent, which shall neither degrade the physical sciences as in German philosophy, nor the metaphysical as in English philosophy, nor the theological as in French philosophy, but annexing the physical to the metaphysical, and complementing both with the theological, shall exhibit them together in the order of nature, of history, of reason, and of sound culture. They will thus be fully digested and prepared as the material of induction, or as the intellectual phænomena to be studied and explained.

It will then remain to frame a *Theory of the Sciences*, or doctrine of perfect knowledge. This will result, like every sound theory, from combined conjecture and induction; will embrace all the facts both of the nature and of the history of

human intelligence; and will be verified by its power to revise and explain the whole existing product of science, as well as to previse and regulate its whole subsequent process. Concentrating the accumulated experience of the race upon the problem of philosophy, it will neither neglect inquiry into the laws of phænomena, nor ignore inquiry into the causes of phænomena, nor yet detach both these from the revelation of the ground and source of phænomena; but will rather combine revelation and reason as complementary means of cognition throughout the entire realm of cognition, and so aim to resume the knowledge of laws and of causes in the knowledge of God, that only First and Final Cause of laws, in whom all phænomena rest and move with perpetual and manifold reflection of His glory.

Thus, according to a true doctrine of knowledge, the sciences, when thoroughly expurgated and surveyed, may be reduced from a mere medley to a system in which their procession shall correspond to that of the phænomena with which they are concerned; the law of their growth shall be a gradual coincidence of reason and revelation; their perpetual effort shall be a logical review of the Divine Intelligence by the human intelligence, through all the categories of fact, from the mathematics in which the universe has its primordial root, to the theology in which it finds its perennial flower; and their goal, ever to be approached but never attained, shall be that omniscience wherewith, looking back as with the eye of God through all His word and works and ways, we shall know even as also we are known.

With the formation and verification of a theory of the sciences, the work of constructing the ultimate philosophy would be accomplished. And it would mark the utmost limit of human cognition. Reason will have entered its last province when it thus retires to reflect upon its own product. The speculative propensity will have attempted its crowning task when it thus seeks the law of its own action and clearly proposes to itself the ideal of its own conscious aspiration. Science will have no other, as it could have no higher aim, when it thus strives to know itself. This first work might therefore be called the science of the sciences.

But if we now suppose such a theory to have been propounded, we would not be content to cherish it as a mere toy of speculation or creature of the philosophic fancy, but be ready to return with it among the sciences from which it was drawn, and apply it as an organ of their further culture, or as the means not merely of observing and explaining, but also of correcting and maturing their processes, of making the imperfect profit by the mistakes of the perfect, and giving them, as a whole, a more precise, concerted and accelerated action. In other words, a doctrine of the cognitive and the cognizable having been framed, it would then remain to bring the former systematically to bear upon the latter.

This next work of applying the ultimate philosophy would involve the preliminary labor of a logical partition of the sciences with a view to their more systematic culture. The arbitrary divisions and assumptions which now prevail among them not only dismember the body of truth, but lead to ill-directed researches and strifes of words; but when they are cultivated in their normal order and with reference to their ideal unity, their growth will be more regular, vigorous, and fruitful. Now, according to our theory, their normal order corresponds to that of the interdependent phænomena which are their material; and their ideal unity results from two opposite modes of knowing or explaining those phænomena, ever tending to logical union in a third. When, therefore, we have thus mapped out the intellectual domain as it lies in nature itself rather than in our crude fancy, we may proceed to devise three corresponding sets of logical canons or rules for the three kinds of intellectual labor to be performed therein.

The first would embrace the *Logic of the Empirical Sciences*, or precepts for pursuing and perfecting our knowledge of natural laws. They will be of various classes: 1. Those which apply to nomological science in general, the organon or rationale of inductive research. 2. Those which apply to the physical sciences in particular, as mechanics, chemistry, and organics; in both their celestial and terrestrial divisions. 3. Those which apply to the psychical sciences in particular,

as psychology, sociology and theology, in both their celestial and terrestrial divisions. This part of the scientific discipline, when complete, would include a system of rules for connecting every class of facts with its laws, and each higher law with the Highest.

The second part would embrace the *Logic of the Metaphysical Sciences*, or precepts for pursuing and perfecting our knowledge of causes. They will also be of various classes: 1. Those which apply to teleological science in general. 2. Those which hold in the physical sciences, affording the evidences of natural religion. 3. Those which hold in the psychical sciences, affording the evidences of revealed religion. This part of the scientific discipline, when complete, would include a system of rules for connecting every class of laws with its causes, and all second causes with the one great First Cause.

The third part would embrace the *Logic of the Science of the Sciences*, or precepts for maintaining and correlating reason and revelation as complemental factors of knowledge throughout both the empirical and the metaphysical realms of research. These, too, will be of several classes: 1. Those which apply to the normal relations of reason and revelation in the scale of the sciences, and will yield us an ideal of perfect knowledge, divine and human. 2. Those which apply to the present disturbed relations of reason and revelation, and will serve to adjust the existing scientific and religious bodies of knowledge. 3. Those which apply to the prospective relations of reason and revelation in the sciences, and afford evidence of their growing harmony and inevitable perfection. This third and last part of the scientific discipline, in order to be complete, would include a system of rules for combining all laws and causes in God, the Author and Ruler of the universe, the Alpha and the Omega of creation, from whose divine reason it has logically proceeded, and through whose infallible revelation alone can it be logically recapitulated.

Thus the true organon of knowledge, whensoever attained, will rescue the cognitive mind from those irregular and conflicting researches with which it is now blindly sallying over the field of truth; and, everywhere adjusting the system of thought to the system of things, and leading the finite upon

the track of Infinite Reason, will slowly realize, through endless ages, in the soul of the creature, for the glory of the Creator, the grand ideal of the whole creation.

By means of such a complete logic of the sciences, the ultimate philosophy would be thoroughly applied. And the discipline of the human intellect would then be perfect. Reason will have become a faultless instrument of research, when it thus moves by a trained logic, as well as with a true aim. Science will have grown to be its own master, when it thus guides as well as knows itself. This second work, therefore, might be called the art of the sciences.

But so soon as we imagine such a scheme of axioms devised and employed among the sciences, we shall see that the tendency will be not merely to build them up into an ideal system as for philosophic pastime, but to effect their logical organization, practical equipment, and the actual endowing of mankind with all material and moral, as well as intellectual riches. Such is the connection between theory and practice, science and art, truth and goodness, that whenever the whole cognitive shall have thoroughly acted upon the whole cognizable, there must issue a vast and homogeneous body of knowledge, fraught with inconceivable utility and grandeur. In other words, the science of the sciences and the art of the sciences, will need to be crowned with a science of their corresponding arts, or doctrine of perfect knowledge, as practically applied.

This third and last work of consummating the ultimate philosophy would no doubt bring with itself, in its initiatory stage, a clearer and more general apprehension of those social laws by which science or exact knowledge becomes effective in moulding human opinions and institutions. So long as the artificial organization of society proceeds blindly, its action must be abnormal and wild; but when the intellectual and moral conditions of true order and progress are demonstrated, we may at least foresee, if not actually hasten, the grand issues of the whole human development in its vital connections with all terrestrial and even celestial influences.

The first of these issues may be termed the *Ultimate System*

of the Sciences. All previous organizations of the body of knowledge share in its existing schismatic and fragmentary state. Instead of building the temple of truth after the model of things, they exhibit creation but as a disjointed fabric, wrought out of the crude and composite material of creature-fancy. Instead of exactly imaging the outer world of fact into the inner world of thought, they show it only in dim and broken reflection as marred by conceit and error. But when all phænomena are studied in their actual successions and co-existences, and not in mere detached portions, and the sciences are partitioned and cultivated accordingly, as an organic whole, then will the chaos which the universe presents to the human mind be changing to the cosmos which it presents to the divine mind, and reason be fairly embarked in her career of ever nearing, but never reaching that height of infinite knowledge, from whence, by means of the physical sciences, she could review and forecast all material life, whether of atoms or of orbs, and by means of the psychical sciences, she could review and forecast all spiritual life, whether of terrestrial or celestial races. "Now we see through a glass darkly, but then face to face; now we know in part, but when that which is perfect is come, that which is in part shall be done away."

In close connection with this issue will also be unfolded the *Ultimate System of Arts.* At present, anything like a more systematic control of nature, by means of a more systematic knowledge of her connected laws, is scarcely attempted or even so much as deemed open to human aspiration. As the sciences, broken and jarring, extend only to detached phænomena, without including their vital relations, so the corresponding arts, or means of modifying those phænomena, are in like manner partial, irregular, and conflicting. The frame of nature is forced to work in piecemeal for her still unskillful master; and it is only in the electric telegraph that we have a hint of a more cosmical power. But when the sciences are more logically organized, and the arts begin to flow from them as foregone aims rather than mere incidental trophies, and with concerted action furthering each other, then will our increasing knowledge be ever yielding increasing control of all surrounding phænomena, and man be rising toward the predicted

dominion over creation. Theology will be giving that art of religion by which Providence predominates over society, and sociology that art of politics by which society predominates over the individual, and psychology that art of ethics by which mind predominates over matter, and biology, chemistry and mechanics, those arts of terrestrial economy by which the whole material system is wrought anew for human service and divine glory.

And last of all, as the grand aggregate result, there will issue the *Ultimate System of Society*. In a philosophical view, both the sciences and the arts are but functions of society, and by their degree of perfection determine its state and progress. As yet the most advanced civilization, racked and torn by conflicting ideas and interests, only reflects the existing disorder and defectiveness of knowledge and consequent waste and turmoil of skill. The whole modern organization of mankind is crude, forced, and heterogeneous, although already an immense advance upon that of antiquity. But when the seriate sciences shall be shedding forth their seriate arts, and all human societies be growing together in the knowledge and mastery of their own phænomena, and of the cosmical phænomena upon which they act, until they are brought into harmony with nature and with God, then will a regenerate race be installed as the living head of the whole terrestrial organism, and the reins of the orb be exultingly gathered in its hands as it careers in the Olympic race of worlds.

Then, too, may even the celestial sciences begin to blossom with celestial arts that shall knit together, in spiritual sympathy, all celestial races. Terrene, solar, and stellar influences, wielded by human prowess and prayer, may unfold the commerce of heaven, the telegraph of the skies, and the worship of the one universal Father, until the ripe, scient earth echoes back the anthem that erst hailed her novitiate, when "the morning stars sang together and all the sons of God shouted for joy."

Thus, in the consummation of such remote issues, will be involved the consummation of all things earthly. Science will then have triumphed over error, and art over nature.

Reason will then have unfolded the whole riddle of the world from its genesis to its apocalypse; and that cosmic ideal towards which the Creator has been moving through mighty epochs of creation, from the primordial planetary germ, by means of successive strata, floras, faunas, and human nations and races, will at length stand forth revealed in the fullness of its life and glory.

At the height we have now reached, how wide the horizon! how grand the prospect! As from a lone eminence of faith, with the whole past and present and future of our race spread out at one view, we look down upon that divine system of the world, in which the end is known from the beginning. We see long ages rolling onward ere it shall all be fulfilled, vast literatures and civilizations shed like forest leaves in its fulfilling, and unspeakable glories crowding thick and fast to its fulfillment, until, blinded by the vision, we almost wonder that mortal may gaze and live. But we will not doubt His fatherly goodness, who, having shown unto His human children even the far-off stars in their destined courses and periods, will surely deign not less that they should scan the track of His earthly promises, and give them some Pisgah where they may lie down and die content that other generations shall enter into that for which they have toiled.

And hence it behooves us next to consider, as being our part in the scheme, the more practical questions of the time, the scene, and the mode of its inauguration.

For the time of its inauguration, all history points to the present age. An era of the world, so fraught with marvels and rife in great movements, might well be crowned with this last and best birth of time. And we have only to review the past and survey the present in order to see that what could not hitherto, may at last now be hopefully attempted. It could not have been undertaken at any previous period, because the two reformations, the one religious the other scientific, of which Luther and Bacon were the leaders, had first to proceed apart to their extremes, and so develop the existing need of their combination. At their spring and while in their incipiency, neither feared nor craved the other. Both were intent only upon freeing reason from

its trammels, whether ecclesiastical or scholastic, and could not then foresee its present license and discord, or the necessity which has thus arisen, of training it to study science itself, with the same directness, patience, and candor, wherewith they trained it to study nature and Scripture.

It is indeed true that in advance of the exigency, that majestic, prescient mind which planned the *Instauratio Magna* would seem to have propounded the very task which is now imminent, or at least, so much of it as relates to the natural sciences, though with no real expectation of seeing it then accomplished. "The sixth and last part of our work, to which all the rest are subservient, is to lay down that philosophy which shall flow from the just, pure, and strict inquiry hitherto proposed. But to perfect this is beyond both our abilities and our hopes; yet we shall lay the foundations of it and recommend the superstructure to posterity." And it is now easy to see that the "universal and complete theory" which, with just forethought he pretended not to offer, could not have been framed or even attempted, until the sciences should have reached some measure of perfection, and out of their own lack of consistency and order clamored for law and system.

But now, at last, this need and preparedness for the great effort have arrived. If we examine, we shall find that each of the three works here projected as necessary to the completion of philosophy may at least be begun, if not pursued to a good degree of forwardness.

Have we not already the materials of the projected theory or doctrine of perfect knowledge? The map of the intellectual, like that of the physical globe, is almost complete, with scarcely a *terra incognita* to be explored, and philosophy might well reach her *ultima thule* in conjunction with geography. In other words, the exact limits of research may be said to have been ascertained and its several provinces defined. All the sciences at least have a name, are in various stages of progress, and fast coming into new and fruitful relations. Attempts even have been made to discover and impose upon them that system to which they are presumed to be tending. And if such forward minds have hitherto failed, it has been partly

because it is only through repeated failures we can pass to success, and also because they have not brought to their task that catholicity, candor, and patience which are the cardinal virtues of the philosophy they espouse, but have allowed some metaphysical or theological prejudice to hinder a just induction, and vainly tried to force upon science, as the old scholastics tried to force upon nature and Scripture, some partial and foregone theory. They have either exscinded the knowledge which has been revealed or the knowledge which has been discovered, and so announced pretended laws of scientific development which both history and reason falsify. But the very fact that efforts in this direction are put forth, and that even these crude, tentative hypotheses have yielded such brilliant results, augurs the full success that is at hand. After long ages of philosophical discipline and the accumulation of a mass of sciences extending to every class of phænomena, what now remains but that the inductive spirit should return upon its own intellectual product, in search of that sublime theory of cognition which is to be its crowning triumph, and at length set forth as the matured reason of the race and the destined apex of the pyramid of knowledge?

Have we not also, in large measure, the means of framing the projected organon of perfect knowledge? The cognitive mind, now grown experienced in all modes of research, has already garnered a store of principles and precedents wherewith to enter intelligently and authoritatively the more imperfect sciences, and preclude the waste and error and confusion which marked its infancy. Master-builders in the art of constructing science, one after another, have tried their hand upon the model, and given well-tested rules for the actual building. In inductive philosophy we have a line extending from Bacon to Comte, and in speculative philosophy, another from Kant to Hegel; while the very extreme into which the two latest thinkers have pushed their respective methods has already created the need of that third and last philosophy which shall mediate between them, and lead them back from their errant courses within the just and safe limits which they impose upon each other. Though our philosophical literature is as yet wanting in this latter department of sciential

thought, and there exists scarcely a treatise which can command the equal respect of both sects of disciples, those of reason and those of revelation, yet there is a craving among each after the laws of their latent affinity and the terms of their ultimate agreement. Now that so much of thorough drill has been infused among the different votaries of science, who doubts but that the logical spirit shall soon enter also their border feuds, and at length devise and publish those perfect canons of research by which the whole host of seekers for truth shall be marshalled as one mighty phalanx for the final career of eternal progression?

And may we not even begin to forecast the actual scheme and issue of perfect knowledge? Although that matured humanity which must result from matured intelligence has hitherto been aspired after only by elect minds, as but a vague ideal, and with faint presentiment; yet now, at least, the prospect grows clearer and surer, and thrills even the popular heart. By a few, at least, the vital connection between society and science is seen to insure the perfection of the one in that of the other. And as we feel that pulse of humanity which ever beats onward, and survey the wreck of systems in which fond visionaries have sought some airy tower of prospect, we can but devoutly hail, even if still afar off, the dawn of that era which the seers and saints and sages of all time have longed to see; and, entering with new joyfulness into their sacred prescience and prayer, proceed to labor as well as yearn for the great consummation.

Thus have we been brought to that fullness of time when Providence seems waiting to give the reins of the world to ripe reason, and is summoning us to enter with faith and hope upon the impending task.

For the scene of its inauguration, philanthropy selects the western hemisphere. A clime so strangely hidden for ages from mankind, would seem but the destined theatre of these later acts of history. And we have but to scan the map of the world to find that what could not elsewhere may here be practically initiated.

It could not originate in the eastern hemisphere. The two diverse civilizations—the oriental and occidental—represent-

ing the practical issues of the two diverse philosophies—the intuitional and the empirical—having proceeded apart for six thousand years on opposite sides of the globe, must meet as in completed circuit on some virgin soil and common ground, ere their joint mission can be accomplished. While still in their native seats, neither can thoroughly sift and appropriate the other. Both are there hampered by inveterate prejudices and contracted relations, and must continue to have something of extravagance in their development; the one towards mysticism, and the other towards scepticism; until thrown together on a new arena where they can find ampler scope and freer action.

It need not, indeed, be denied that in European civilization the eastern and western mind, the religious and scientific spirit have already for eighteen centuries been combined; but this very combination has at length only shown an exigency which it cannot meet, and materials which it cannot use upon its own soil. The rigid, social, national, and political distinctions of the Old World, to say nothing of its meagre physical location and structure, preclude that collection and fusion of all the elements of humanity, which is to be the work of the true cosmopolite philosophy.

But in this western hemisphere not only are such elements far more varied and abundant, but the facility for their recomposition is perfect. The American geography, genealogy, politics, and religion are simply unparalleled, either in ancient or modern civilization, and together form an aggregate of all that is peculiar to the civilizations of Europe, Asia, and Africa. Such a medley of climates, of races, of institutions, of creeds and theories, fusing under one political system, affords materials for a philosophy which cannot but be final; and, by projecting on a grander scale and with fuller conditions, all the time-worn issues of history, shows that here, if anywhere, the whole terrestrial problem is at length to be solved. Who that surveys this wide intellectual and social anarchy, and the swift and intense passions pervading it, but must feel that sooner or later, the plastic spirit of human opinion which, ever strengthening with the growth of reason, has wrought through all the past, disorganizing and reorganizing successive civiliza-

tions, must at last educe order from this chaos, and mould the ideal reign of truth and virtue?

Thus has Providence already opened and garnished the stage whereon to unfold that consummate system, which, as it is to be the flower of all thought and fruit of all climes and ages, can be called after no name, however worthy, and claimed by no people, however illustrious.

For the mode of its inauguration, philosophy ordains the academic curriculum. The educational system, as the primal fount of knowledge and influence in the social organism, affords the normal method of turning the grand ideal into a reality. And but a glance at the existing state of society will show that it alone is competent to the task.

There is an obvious unfitness in all other agencies. The professions and the press, being distributors rather than contributors of new ideas, and reflectors rather than manufacturers of opinion, as well as liable to be swayed by disturbing interests and passions, are too low down in the scale of social influence to reach the springs of existing evils. A movement which is to cure them by harmonizing science and theology, must originate beyond the sphere of popular prejudice, in that quiet circle of thinkers and scholars where truth is prized for her own sake, and sought with the zeal of the votary. The tactics and the drill of this warfare are not to be learned amid the smoke of battle, by the mere tyros and bigots who are in such haste to practice them, but must be brought thither by those who have been schooled into philosophic tastes and habits.

This at least, it may be safely affirmed, is the judgment of intelligent conservatives, who are in the field and acquainted with its wants. There is a growing feeling throughout the educated classes that the crisis has become too grave to be continued as a mere topic of periodical review or theme of professional declamation. What pastor, lawyer, or physician, if he has the time or taste, is competent to grapple with the great question in any of its branches? He encounters at once the suspicion of having got beyond his province, and is sure of the contempt of one or both parties, if only because of his supposed unfitness and prejudice. The work has plainly

reached the importance of a special cause, calling for special qualifications, and the devising of new appliances, more fixed and organic than any now in use.

It should not indeed be overlooked, that this craving has already been long expressing itself in a rich and growing literature, partly in the interest of science, and partly in the interest of theology, and sometimes by the institution of prize-essays and lectureships, which are directly aimed at the work of their conciliation; but whatever success has hitherto attended such scattered and irregular efforts only lights the way to others that may be more direct, lasting, and effective.

It is by means of academic training alone, that the whole social organism can be reached and cured of its present vicious and morbid action. The true university is its brain, receiving from professorships and distributing through the professions ideas that rule the masses; and according as it is sophisticated or purified will the whole body be depraved or ennobled. In other words, we have only to recur to the social evils described as the issue of the great schism in modern philosophy, to see that they can only be met educationally, by special courses of study and instruction, at the seats of culture where they stealthily and unwittingly originate and are often unconsciously harbored.

It is there that we must seek the unity of science. She gathers thither her votaries to endow them with her riches, and assign them their tasks, and so long as she presents but a divided front and ranges them in opposite ranks, must the breach between them be only widened; but in proportion as both the rational and the revealed sciences are studied in their actual connections, and brought into some logical relationship; as fast as the former are made to illustrate the character, policy, and purposes of the God of revelation and the latter are established in harmony with all the discoveries of reason, will they be found to be but branches from one root of knowledge, living and growing in the truth.

It is there, also, we must seek the catholicity of learning and the communion of scholars. From thence the youthful mind, while forming its intellectual habits, and ere it has been narrowed by professional prejudices, receives its life-long bias;

and only by diverting it, from its present tendencies toward either skepticism or bigotry, can the whole educated class be imbued with a spirit of large and generous culture.

And it is there, too, we must seek a salutary influence upon all the great interests of religion, politics and art. Let the salt of truth be cast into these living fountains, and the stream of intellectual and moral corruption will be cleansed; the evils of the church, the state, and the life will be cured; and a current of new and vitalizing ideas poured throughout the whole social body. Though now all surrounding civilization seems based in error and ignorance and swayed by conflicting opinions and prejudices, still we need not fear but that the spirit of truth, training and marshalling her votaries in such sequestered haunts of culture, shall yet lead them forth as a disciplined host, even into the thick of this great conflict, and there proclaim her destined rule of order, law, and love.

It may serve to give more definiteness and feasibility to these views if we here insert a scheme of academic studies, based upon the foregoing project and arranged with reference to the existing and prospective state of the sciences.

PART I.—SCIENCE OF THE SCIENCES.

1. EXPURGATION OF THE SCIENCES.

Misconceptions as to the origin, value, and dignity of science.

Of science as the function of the social or collective mind.

Of science as distinguished from ordinary or popular knowledge.

Of science as distinguished from art.

Of science as distinguished from philosophy.

Its essential unity amid artificial divisions.

Its steady progress through human vicissitudes and adverse influences.

Various popular, professional, and philosophical prejudices, which now hinder the unity and growth of the sciences: their source and remedy.

Various intellectual and moral qualifications for pursuing the sciences, demanded by their present state.

Conditions and resources of a science of the sciences.

2. SURVEY OF THE SCIENCES.

German, French, and English classifications or systems of the sciences: their merits and defects.

Principles of the true system: 1st That they should be arranged according to the actual order of phenomena as co-existent in space, the celestial in connection with the terrestrial mechanics, chemistry, organics, ethics, and politics. 2d. That they should be combined according to the actual order of pheno-

mena as successive in time, the material preceding the spiritual, in a series rising from the simplest physical facts to the most complex psychical facts.

By still farther separating them into abstract and concrete groups, we get the following map of the sciences, with its bounded provinces and known and unknown regions:

	Abstract Sciences.	*Concrete Sciences.*	
Celestial and Terrestrial.	Religious.	Theology.	Psychical.
	Social.	Sociology.	
	Individual.	Psychology.	
	Organical.	Anthropology.	Physical.
	Chemical.	Geology.	
	Mechanical.	Astronomy.	

Characteristics of psychical as distinguished from physical science.

Characteristics of metaphysical as distinguished from empirical science.

Relative advancement of the sciences.

Brief summary of their results: in the expansion of the intellect, in the accumulation of truth, and in new accessions of human power, dignity, and happiness.

Their need and readiness for some logical organization and more systematic culture.

3. THEORY OF THE SCIENCES, OR DOCTRINE OF COGNITION.

(1) Of the cognitive, or the means of cognition.

False theories, which would reject either reason or revelation, or would derange their normal relations.

The true theory, that of their gradual coincidence and ultimate harmony.

Foundation for this theory in both the nature and the history of the human intellect.

Its accuracy and fitness.

(2) Of the cognizable, or the material of cognition.

False theories, which would ignore either the causes or the laws of phenomena.

The true theory, that which would be cognizant of both in their actual coexistences and successions, and claim as the ideal domain of science the whole aggregate of worlds throughout all ages.

Foundation for this theory in both the structure and the development of the universe.

Its completeness and grandeur.

(3) Of the cognitive in action upon the cognizable, or the process of cognition.

False theories, which would either confine reason to terrestrial and material phenomena, or confine revelation to spiritual and celestial phenomena.

The true theory, that which would combine both means of cognition in all fields of cognition as involving a joint process of finite and infinite intelligence throughout immensity and eternity, toward the goal of omniscience.

Foundation for this theory in the relations of finite and Infinite mind, and in the history of the human sciences.

Procession of the sciences in correspondence with the procession of phænomena, as involving an endless review of the creation, by the creature, for the glory of the Creator.

Ideal perfectibility of knowledge as contrasted with its actual imperfection.

Means and motives for ever striving after perfect knowledge.

PART II.—ART OF THE SCIENCES.

Need of precepts for pursuing and perfecting the sciences, with a view to their systematic culture.

1. INDUCTIVE LOGIC, or Organon of Empirical Science.
2. DEDUCTIVE LOGIC, or Organon of Metaphysical Science.
3. SYNTHETIC LOGIC, or Organon of Perfectible Science.

The latter embracing the following scheme of rules for harmonizing the rational and revealed bodies of knowledge:

THE NORMAL STATE OF THE SCIENCES.

1. In each science reason and revelation are complemental factors of knowledge, the former discovering what the latter has not revealed, and the latter revealing what the former cannot discover.

2. In the ascending scale of the sciences the province of reason contracts as that of revelation expands, with the growing complexity, obscurity, and human importance of the sciences themselves.

3. The joint action of reason and revelation throughout the sciences logically involves the perfectibility of knowledge or the indefinite expansion of science toward omniscience.

THE EXISTING STATE OF THE SCIENCES.

1. Hypotheses and dogmas are to be formed by the scientist and religionist independently, each in his own province, and by his own methods.

2. Dogmas within the province of the scientist must be tested in the same manner as his own hypotheses; and hypotheses within the province of the religionist, in the same manner as his own dogmas.

3. Conflicting hypotheses and dogmas may be provisionally adjusted by exhibiting the problem of opinion, according as reason or revelation predominates in the normal scale of the sciences.

THE PROSPECTIVE STATE OF THE SCIENCES.

1. In the progress of the sciences, conflicting hypotheses and dogmas, by their own attritions and mutual corrections, pass into the theories and doctrines accepted by both parties.

2. This gradual conversion of the hypothetical and dogmatical into the scientific, proceeds in the order of the sciences, from one set of facts to another, from the simple to the complex, from the lower to the higher, from the physical through the psychical sciences.

3. The historical goal of the whole scientific process, ever to be approached even if never attained, is the absorption of positive in absolute science or perfect knowledge.

The ideal of a full equipment of the sciences for their work of endless progression toward perfect knowledge.

Prospect of its realization.

PART III.—SCIENCE OF THE ARTS.

Practical issue of the sciences in their correspondent arts.

This growth of the arts out of the sciences, from having been spontaneous and irregular, may become more and more logical and systematic.

Logical partition of the arts to be adjusted to that of the sciences.

1. SCIENCE OF THE MATERIAL ARTS, or principles which regulate the rational control of man over mechanical and chemical phenomena in both the terrestrial and celestial spheres of action.

2. SCIENCE OF THE MORAL ARTS, or principles which regulate the rational control of man over individual and social phenomena in both the terrestrial and celestial spheres of action.

3. SCIENCE OF THE RELIGIOUS ARTS, or principles which regulate the rational control of man, in co-operation with God, over both material and spiritual phenomena.

Procession of the arts from and with the sciences as involving the progressive dominion of the creature over the creation, and his participation in the glory of the Creator.

Ideal perfectibility of the arts as contrasted with their actual imperfection.

The perfection of terrestrial sciences and arts, both material and spiritual, as involving a union of the human with the Divine mind and will in the knowledge and control of all terrestrial phenomena.

The perfection of celestial sciences and arts, both spiritual and material, as involving the endless return, through all worlds and ages, of the finite into the Infinite Reason and effort after the one perfect religion or *religature* of the creature to the Creator, through and by means of the creation.

Aims of such a course of studies: 1st. To preserve throughout the scale of the sciences the vital connection of the rational with the revealed material of knowledge and the logical correlations between the human and the divine factors of knowledge. 2d. To combine in each science all that is established as discovered with all that is established as revealed, and as to all that is still hypothetical and dogmatic, to show the problem of opinion. 3d. To connect logically the ascertained portions of one science with those of another, and problematically their theoretical portions. 4th. To display with the series of the sciences their corresponding series of arts as ever tending to enhance the Divine glory and human welfare. And lastly, to organize, by this means, that proximate system of sciences, arts, and societies, upon which to project, in endless perspective, the ultimate system.

The practical objection may here be raised that an academic field, so wide and rich, would demand an amount of research and erudition in the teacher, and a degree of maturity and scholarship in the pupil, which are quite impossible.

To the former part of the objection it is enough to reply: 1st. That the aim need not be to traverse the two great divisions of knowledge throughout their whole extent, but merely

that intersected portion of them where they are involved in a kind of border warfare. 2d. That into this common field it would be needful to enter only with a resumé of established truths and principles, rather than with special researches and acquisitions. 3d. That to master the abstract part of any of the sciences, what may be termed their philosophy or logic, does not require learning so much as thought and study. 4th. That those very faculties of abstraction, generalization, and comparison which would qualify for such a task, would almost disqualify for any other, and be hindered rather than stimulated by minute investigations. There are, moreover, abundant helps to the work to be found in standard treatises authoritative in both schools, in compends of their several attainments, and in a current literature, teeming with the richest and most varied contributions.

To the latter part of the objection it may be replied: 1st. That it enters into the scope of all academic life to increase as well as diffuse the existing stock of knowledge. 2d. That in fulfilling this latter aim, there is always a vast amount of instruction which is simply stored rather than at once digested in the mind of the student. 3d. The efficiency of such teaching would, after all, depend upon the stage in the curriculum at which it should be introduced, and the personal enthusiasm with which on both sides it is conducted.

We are thus led next to inquire as to the particular form which such academic training should assume, or the best method of incorporating it in existing systems of education.

And here the general principle is obvious, that it belongs to the more advanced stages of pupilage, and should accompany or follow special training in the two departments it aims to unite. It could only, in order to be effective, come after a gymnastic or subgraduate course, and would defeat its own aim if addressed to immature and unfurnished minds. According to the theory of the true university, it would be the proper supplement or complement of the three faculties of law, medicine, and theology, and might appear among them simply as a philosophical professorship, designed to take the results of other professorships, and, after recombining them, transmit them through the professions into the sphere of practice.

Such a device would not only act as a fixed, aggregating centre of those border topics by which the professions are logically joined together, fostering the commerce of ideas among them, though without hindering that division of labor in which they thrive, but it would also, by its bearing upon all contemporary intellectual movements, remain as a watch tower and bulwark of truth on the field of error.

If the theory seem somewhat visionary as applied to our American system, this may only serve to show at once our danger and remedy. There could not, in fact, be more striking proof of our need, motive, and opportunity for the great reconciliation than is yielded by the history and present state of the academic curriculum. That schism, which in the European universities has issued in no outward dissociation of the band of scholars, has spread through our whole scheme of education as a visible breach, until at last both philosophy and theology seem to have lost their normal rank and power, and the very words are turned by their respective followers against each other with something of suspicion. We have two classes of institutions—the secular and the sacred, the civil and the ecclesiastical; and in both the work of disruption has been going forward. Theology has been driven from the former by the gradual ascendency of the classics and mathematics over the old metaphysics with which it was once associated; and philosophy has been driven from the latter by the degradation of the study of divinity into a mere professional and sectarian training of the clergy.

And hence the first question to be met in attempting their educational fusion is as to which party the initiative should be given; whether the movement should come from the theological or from the philosophical side, in the interest of religion or of science, as an ecclesiastical or as a catholic effort. The whole effect of such academic study, will plainly be modified according as one or the other of these points of departure is taken.

In a purely theological course, it would appear as a branch of apologetics or polemics; and the aim would be not merely to uphold the general authority of Scripture, but also of some particular creed or confession drawn from Scripture, in its con-

tact and conflict with the human sciences. And this, chiefly as a kind of armor and drill for the battle with heresy and infidelity. In a purely philosophical course, it would appear as a branch of disinterested research; and the aim would be, ignoring all creeds and sects, and viewing the revealed in connection with the rational sciences, to define and defend the prerogatives of each in its own domain, and to exhibit their joint product under a scientific rather than a practical aspect, and in its due place and connections, in the general body of learning.

In favor of the latter as compared with the former, several reasons may be urged.

In the first place, it is the more natural and reasonable method. A work of mediation involves mutual concession; and if this great movement must be initiated at either extreme, it has a clear right to come from the scientific side, where it originated, and should be met and welcomed. It is in fact a concession which we not only can afford to make but must make, that revealed truths are as susceptible as natural truths of rational support and confirmation, and may also be safely taught without regard to their practical applications, or to the transcendent interests they involve, and in entire freedom from all prejudice, as pure matters of abstract rather than of applied science. If the great fundamental tenet of inspiration cannot base itself in scientific discovery, but is doomed to be steadily undermined, then the whole superstructure of the biblical sciences must crumble with it into ruins as mere superstition and bigotry. While we are unwilling that savants should force their theories upon us as creeds, we must permit them to treat out creeds as theories until found consistent with science. We need not fear, that practically and personally the one party will be any the less moral, religious, and orthodox, or the other any the less learned, humane, and philosophical, on account of such a problematical state of their relations.

So long, indeed, as theology, in a course of education, is forced into any warlike bearing, offensive or defensive, apologetic or polemic, even her own interests may be damaged; but when she is allowed her due place among the sciences,

as alike entering with them all into the training of an accomplished scholar, and it is made the recognized vocation of both teacher and pupil to address themselves to her lessons with philosophic candor and conscientious enthusiasm, truth will at least be in the way of gaining the homage of reason, and from the first have the vantage over error.

In the second place, it would reach a larger and more varied mass of the forming mind of society. Instead of being confined to one calling, it would include candidates for all the three learned professions, who, viewed respectively as votaries of physical, metaphysical, and theological science, are the real parties first interested in the reconciliation, and by their presence together in the same relations might yield a wholesome stimulus and check upon both professor and student.

In the third place, it would be preventive, rather than simply remedial, as to existing social perils. However desirable it may be to equip the Church with new apologetic appliances in view of modern scientific skepticism, yet these after all would not reach the evil at its hidden springs. It has its origin in the very methods, habits, and acquirements of science, and by means of these alone can be mastered and corrected.

In the fourth place, it would have the high character and even the impressive appearance of an effort to follow the revolted sciences into their own haunts of estrangement and error and win them back again by their own logic and laws. It would be leading forth the young and eager thought of the time on a new mission of truth and love, rather than in the old and crooked ways of prejudice and passion. What are most of the existing treatises or even professorships put forth in the interest of theology, as viewed by her foes, but weak confessions that she is on the defensive, and base signals of defeat? It is not by polemics, apologies, or evidences, that she will ever resume her rightful dominion in the seats of learning. It is not by any sacred sophistry that she is to convince the disciples of reason, or with mere dogmatic assertion that she can reclaim the homage of philosophy. Science, like nature, can only be controlled through a knowledge of her laws. These once found and imposed, she will prove no way-

ward seeker of truth, but as her Eastern sages once read a gospel in the stars, will come by her own researches to the manifested God, and worship Him with fair and costly art.

But from whichever side, or at whatever point of the academic system, the work of affiliation shall proceed, as it advances it cannot but be met with a wide and hearty welcome. He has but illy scanned the present state of learning who takes the wordy strife of mere bigots and savants as a fair reflection of the general mind upon the question. There runs through the catholic thought of the age, however seldom expressed, a deep undertone of sadness and misgiving rather than of mutual anger and defiance. True philosophy takes no delight in this sore feud, which has rent the body of her disciples in twain, but in their midst still secretly yearns for a just reconciliation. And when once any movement shall have gone forth among them which shall seem to command them with a voice of reason and love, it must sooner or later be hailed with joy, however obscure and feeble may have been its beginnings.

Thus has Providence prepared the soil, as well as disclosed the field, and sifted the seed for a mighty harvest of truth, in which we may be the sowers and the latest posterity the reapers. A great work may at least be commenced by us: the time is at hand; the scene is ready; and the mode is obvious. In these last days and at these ends of the earth, we have the means of not merely projecting but also of inaugurating that scheme of perfect knowledge through which the dissevered hosts of philosophy are to be thoroughly organized, and at length science matured, art perfected, society renewed, and the whole world filled with a glory of which it is not possible now to conceive.

Here let us rest in this difficult ascent of thought which we have climbed. Though the way may have seemed uncertain and tedious, yet the prospect gained is sure. That which can now only be called the ultimate philosophy may rise under another name and in other ways; but whenever, wherever, and however inaugurated it is itself inevitable. Every species

of pledge, the word of God, the law of facts, and the voice of reason combine to proclaim it. It is that perfect system of knowledge and of society which both logically and providentially results from the whole previous development of humanity. It is the goal of history, seen with the eyes of prophecy and philosophy, and yearned after by the heart of philanthropy. It is the millennium projected upon rational sequence as well as divine decree; and could it fail to come to pass, it would not simply be as if a great human hope had perished, but as if the divine reason had falsified its own premises, laid through all the past, and left the problem of the world unsolved. Astronomers tell us that were this material globe to reel from its orbit, it could only be by a miracle, suspending the very laws of mathematics; but how much less conceivable that the moral world should ever recoil in mid-progress and the whole work of time become a meaningless fragment! The flower of the planetary life, rooted in extinct marvels, and blooming through long ages of sin and sorrow, will not thus be blighted at its budding. The fairest ideal that lives in divine and human fancy will not thus be turned to naught.

Behold, then, at one glance, the issue to which we are come. The summary want of the age, is that last philosophy into which shall have been sifted all other philosophy, which shall be at once catholic and eclectic, which shall be the joint growth and fruit of reason and faith, and which shall shed forth, through every walk of research, the blended light of discovery and revelation; a philosophy which shall be no crude aggregate of decaying systems and doctrines, but their distilled issue and living effect, and which shall not have sprung, full born from any one mind or people, but mature as the common work and reward of all; a philosophy which, proceeding upon the unity of truth, shall establish the harmony of knowledge through the intelligent concurrence of the human with the divine intellect, and the rational subjection of the finite to the Infinite reason; a philosophy, too, which shall be as beneficent as it is sacred, which in the act of healing the schisms of truth, shall also heal the sects of the school, of the church, and of the state, and while regenerating human

art, both material and moral, shall at length regenerate human society; a philosophy, in a word, which shall be the means of subjecting the earth to man and man to God, by grouping the sciences, with their fruits and trophies, at the feet of Omniscience, and there converging and displaying all laws and causes in God, the cause of causes and of laws, of whom are all things and in whom all things consist; to whom alone be glory.

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